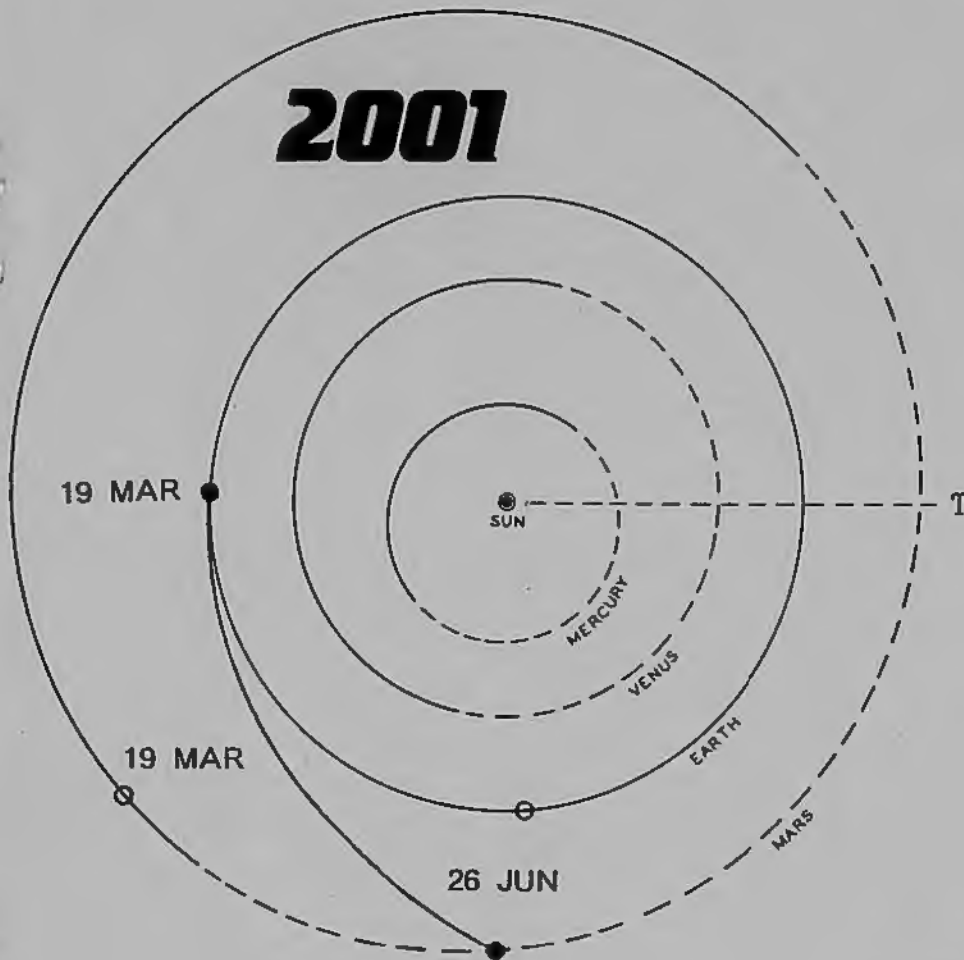


To Mars!



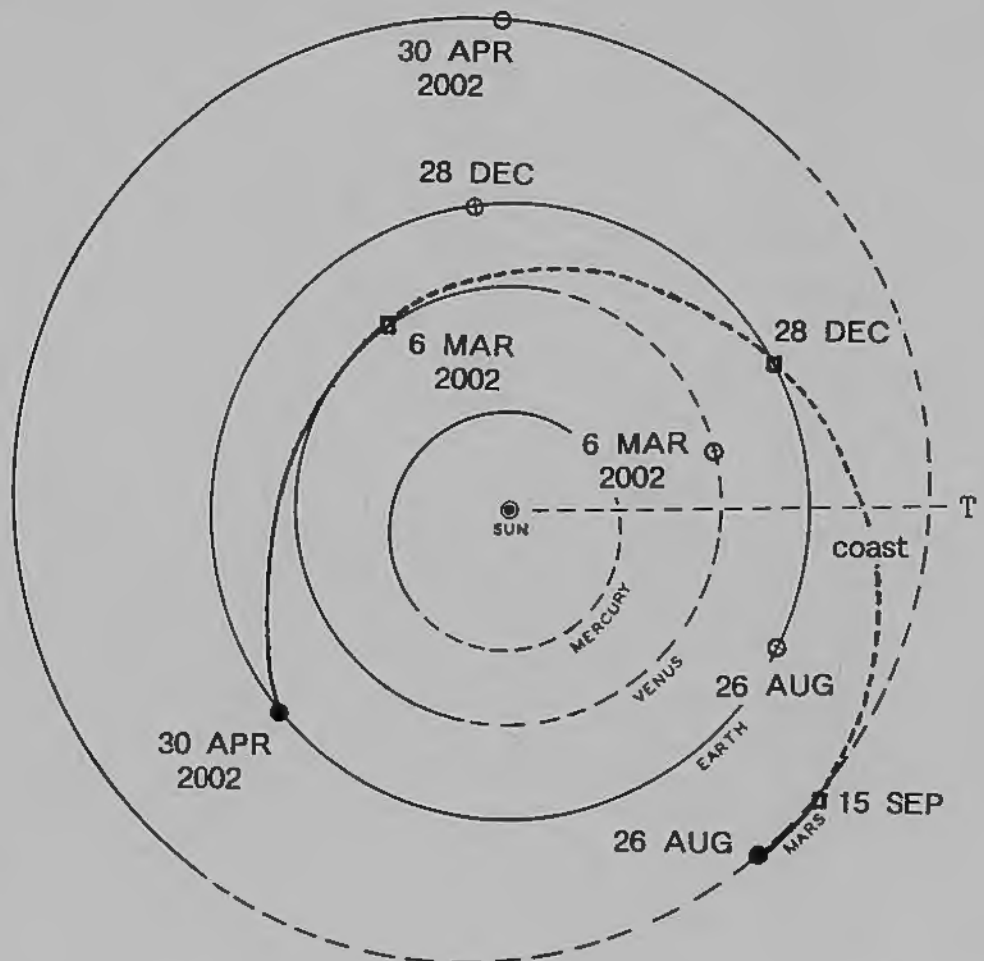
BOARD THE MARTIAN EXPRESS
Fly to the Red Planet in 99 days...
stay for 61...

and back

...then home again
via the orbit of Venus
in 248 days

Make the round trip
in just 408 days!!

with
APA-TECH



[illegible]

A decorative separator consisting of a continuous row of small, dark gray triangles pointing upwards.

The folks at Isher will be at the following conventions before the October deadline:
Babelcon (15 August), Grand Rapids, Mich.; ConFederation (28 August), Atlanta

ROSTER

Andy Anda [42]	5635 N. Kostner Ave., Chicago, Ill. 60646 (312)-685-7768
Alice Bentley [5]	853 Lorlyn Dr., Apt. 1E, West Chicago, Ill. 60185 (312)-293-0427 [address about to change]
Guy Consolmagno [47]	200 High St., Easton, Penn. 18042 (215)-252-5020
Hugh Daniel [44]	P.O. Box 7213, Menlo Park, Calif. 94062 (415)-548-1361
Al Duester [38]	19 Quissett Ave., Woods Hole, Mass. 02540 (617)-540-3250
John Frambach [39]	Rt. 1, Box 339B, Sawyer, Mich. 49125
Barry Gehm [55]	129 Burcham, Apt. 10, East Lansing, Mich. 48823 (517)-337-9301
Sheila Groves [52]	335 Sagamore, Rochester, N.Y. 14617
Jamie Hanrahan [18]	7685 Acama Pl., San Diego, Calif. 92126 (619)-271-6804
Bill Higgins [17]	853 Lorlyn Dr., Apt. 1A, West Chicago, Ill. 60185 (312)-293-1050
Valli Hoski [13]	228-D South Maple, Oak Park, Ill. 60304 (312)-383-3864
Bonnie Jones [43]	129 Burcham, Apt. 1, East Lansing, Mich. 48823 (517)-351-0278
Dave Levine [26]	117 N.W. Trinity Pl., #37, Portland, Ore. 97209 (503)-224-6427
Linda Struwe- Matsushita [51]	2-15-1 Kosobe, Takatsuki, Osaka 569 JAPAN
PNSA Eric Roman Nash [53]	Div-X USS Orion AS-18, FPO New York, N.Y. 09513-2570
Sam Paris [45]	P.O. Box 41067, Chicago, Ill. 60641
Dave Powell/ Susannah West [56]	Box 98, Ripley, Ohio 45167
Donna Proni [19]	530 W. Walnut St., Kalamazoo, Mich. 49007 (616)-342-4967
Tullio Proni [10]	same as above
Greg Ruffa [11]	10380 Maya Linda Rd., Apt. C-303, San Diego, Calif. 92126 (619)-695-8647
Steve Salaba [57]	610 Luella Ct., Kalamazoo, Mich. 49001 (616)-345-9651
Dean Anton Sherwood [50]	3107 School St., Oakland, Calif. 94602 (415)-JEDI-KNT

Roxanne Meida Shields

[48]

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Renee Sieber/

Marty Franz [4]

525 W. Walnut St., Kalamazoo, Mich. 49007 (616)-344-1183

Dick Smith [6]

2007 Howard St., Evanston, Ill. 60202 (312)-475-8863

Rod Smith [7]

730 Cline St., Frankfort, Ky. 40601

Bob Trembley [56]

11542 Roxbury, Detroit, Mich. 48224 (313)-526-0747

Kiran Wagle [54]

4924 N. Washington Blvd., Indianapolis, Ind. 46205

Guy Wicker [32]

564 W. South Blvd., Rochester, Mich. 48063 (313)-852-8081

Rolf Wilson [28]

611 W. Hill, Champaign, Ill. 61820

* * *

I hope you have all received the letter I sent out a couple weeks ago. I am starting an experiment for one year, starting next month, to see how this APA will work as a monthly. The scheme will simply be to send GTB your 'zines during the usual mailing months and to send them to me on the odd months. I have indicated that I should receive at least 10 pages, other than the basic editorial stuff, to produce an issue. I feel it would be a waste of your postage if I get less response than that.

Naturally, I don't expect to hear from everybody every month. I want to try increasing the number of opportunities to communicate, however, to see what effect that has on members' activity. If I don't get enough material in one of my months, I will send what I do get to GTB for inclusion in the next issue. If I don't get enough material over the entire year, I will be satisfied that this APA cannot work as a monthly. Anyway, we'll see how it goes... (One member has already written, expressing the opinion that participation will decrease; another I spoke to on the phone was pleased to hear about the monthly format. Basically, I'm calling the bluff of those who wanted greater frequency. So show me yer stuff!!)

I will be happy to provide copying service for those who would prefer to send originals to me. The best rate I've found in town for good-quality copies is 3¢ each right now. (There's a place opening near work that claims 2¢ each, but I won't know how good they are until they get into business...)

I have notified people with negative balances to cough up some dough. If you owe money, you won't be seeing this issue until you're flush again... The recent addition of new members has now saturated our copy count. That will entail dropping inactive members as we gain new ones, unless you want to raise the copy count above 30. We'll start deleting people with deficits whom we haven't heard from in a long time, then others who are inactive as necessary. (The minac rule only gets enforced about once every two years and we don't enjoy dumping people, so let's hear from you!!)

All right, on to the APA! Hope to see you in Atlanta or at least here next month. Enjoy the rest of the summer!

Shal.

Membership Roster: 1979 - 1986

active	inactive
	1 - Keith Thorne
	2 - Michael Sestak
	3 - Michael Bentley
4 - Renee Sieber / Marty Franz	
5 - Alice Bentley	
6 - Dick Smith	
7 - Rod Smith	
	8 - Steve Johnson
	9 - Bill Colsher
10 - Tullio Proni	
11 - Greg Ruffa	
	12 - Gordon Garb
13 - Valli Hoski	
	14 - Clyde Jones
	15 - Angel Insley
	16 - Alex Ellingsen
17 - Bill Higgins	
18 - Jamie Hanrahan	
19 - Donna Proni	
	20 - Doug van Dorn
	21 - Bill Leininger
	22 - Mary Lynn Skirvin
	23 - Kevin Dunn
	24 - Kip Williams
25 - Marty Franz (now with 4)	
26 - Dave Levine	
	27 - Bill Roper
28 - Rolf Wilson	
29 - Dave Powell / Susannah West	
	30 - Gretchen van Dorn
	31 - Robert Osband
32 - Guy Wicker	
	33 - Martha Soukup
	34 - Jon Singer
	35 - Jerry Corrigan
	36 - Paul Gadzikowski
	37 - Jeff Sekiya
38 - Al Duester	
39 - John Frambach	
	40 - Clif Flynt
	41 - Gail Hanrahan
42 - Andy Anda	
43 - Bonnie Jones	
44 - Hugh Daniel	
45 - Sam Paris	

(continued)

- 47 - Guy Consolmagno
- 48 - Roxanne Meida Shields
- 50 - Dean Anton Sherwood
- 51 - Linda Struwe-Matsushita
- 52 - Shiela Groves
- 53 - Eric Nash
- 54 - Kiran Wagle
- 55 - Barry Gehm
- 56 - Bob Trembley
- 57 - Steve Salaba

46 - Charles Galway

49 - Nikki Ballard

DREAMS AND DESIRES

A zine for Apa-Tech # 42, written by Donna Proni, at 530 W. Walnut,
Kalamzoo, MI, 49007. (616) 342-4967

Well, I went to the doctor today and he perscribed a fertility drug for me --- so, depending on how many things in my system are screwed up, I may be getting pregnant in the not too distant future.

My sister Cheryl had a baby at the end of last year, so he was about 6 months old when we were in Chicago to visit in June when my brother and his family came in from Colorado - I had around me a 6 year old niece, a 4 year old nephew, a 2 year old nephew, and a 6 month old Godson (nephew). And if that wasn't enough, the next weekend we went to Toronto - but Thursday night we stayed at Bob and Connie's - and there was Rachel. When the obvious question came up "so when are you two going to start having kids?" I said that we were trying to wait until we could afford it. My sister said that if we do, we'll never have any. I decided that she was probably right, and made an appointment when we got home.

OK, so they were little terrors after being in a house with all of them, plus the rest of my family, plus two dogs, plus a cat in heat. But they were also wonderful to be around. During one hour, it's a time to make me think I'll never want to have kids --- but there's three hours of time that makes me want them even more.

We do have one slight problem - names. Tullio doesn't like "common" names (Robert, John, Christopher, etc.). I don't like "weird" names (Tullio, Zachery, Sergio, etc.). We've agreed on what a girl would be named (Adriana Maria), but can't seem to make any headway with boys names. Does anyone have any suggestions - maybe you know some names that are not exactly common, but not too weird either? I know, I know --- I'm a long way from having to worry about such things - but I hate to wait until the last minute.

Other than that, not too much new here. The heat is oppressive - but I bet you all feel it where you are too (at least as I write this

on the 18th of July). Time to take a cool drink and a nice fan, and just relax. Ahhh.

MAILING COMMENTS

555 Times - GTB - There's quite a few people on the roster who aren't listed anywhere in the index for the past year. Since we do have a full roster, we'll have to decide who to drop if we get any more members - so all you folks should write something to get back onto the active list.

Letter from Easton - Guy - You say that any American student can "...form an opinion, take a stand..." & know "...the difference between facts, opinions, and wishes..." - but I don't know if that's true. I've heard that since TopGun came out enrollment in the navy has skyrocketed. Is this from people who can tell the difference between fantasy and reality or from people who saw something in a movie and therefore assume that their life will be the same if they join the navy.

Dayton is a Great Place to Live - Roxanne - Love your title//How could you tell Jeff that his friend won the Nebula? Especially after you sensed her hesitation over telling you when you asked? Sure he probably could have figured out that she'd only call then for a "yes" (if he could figure out anything at that hour), but I still think you should have let her be the one to tell him.

Insignificant Other - Barry - Have you gotten your money from Windycon yet? Are you going to go back this year if you don't? We won't be making it this year (no you don't have that much influence - we just didn't get a table) which doesn't bother me as much as it once would have. Windycon was my first convention, and it has held sentimental value in the past - but the past is getting farther away and so is the sentiment - it just isn't much fun anymore. We enjoy Capricon far more. Maybe whoever took the fun out put the "con" in.

Amorphous Abstractions - Guy - Try to leave a little more margin space next time (on the stapled side at least).//I think perhaps work is obsessed with you more than you are with it.

Crumbcrunchers, Inc. - Susannah - Thanks for the history/geography lesson - I always told my parents there was real information in this thing that I "waste" my time on.// Marlene is two?!? Has it really been that long since we've seen you folks? I guess we will have to start planning a nursery for Ishercon.

Rialto-Bijou - Steve - There, was that so hard (after a year of cajoling)?//Where did you pick up those extra pages? Of course, if you start a controversy you risk opening yourself to violence and murder - after all some of us play D & D - you better watch me really close - I might cast a death spell at you (or at least a lighting bolt which is the best my mage can do --- did you say your house lost power for a while during that storm the other night...are you sure it was the storm, and that the storm was natural???)

Transporter Topics - Rod - re Burmuda - Who got first and second?//If you don't like crowds, Ishercon is the wrong place to be (unless you can afford a hotel room to sneak off to when it gets to be too much). It just gets bigger every year with no good way to stop it, but as long as we still have fun (and don't destroy the house in the process) we'll keep having them. But we do have other smaller gatherings. It just seems like you'd get the most for your travel dollar and effort by coming when the most people are here to see. Oh well, you figure it out.

Incorrect Thoughts - Marty - As you know, I Learned Stuff from reading your zine. To all you kiddies out there who were afraid to try this at home --- Alex didn't beleive that Lysol would burn, so one night we tried it. NEAT STUFF! If you haven't done this yet, go to your bathroom tile right now and spray some Lysol and then light it up. Thanks Marty.//Often I wish you would write a short note on what you're commenting on - I don't usually have my previous issue with me when I read the current issue, and your comments are often confusing due to lack of knowledge on what you're talking about. (And then, sometimes they're just confusing.)

There is No Mud in Joyville - Greg - re yr ct me - I guess that being in one of the "hotspots" of GT (and coming here out of the other one), makes my view of things a little slanted. Also living a life of

selling rayguns probably makes me just a slight bit biased.//If we wanted to recruit new members we'd have to solve the problem of either dropping dead weight (some of which are my best friends) or expanding our copy count (which I know you don't think we should do). Maybe we should recruit for pyro - I suspect that Jamie and Gail could use some monetary input.//re "have a nice day" - Barry decided that whenever you leave people or they leave you you spend too much time saying things like "have a nice day", "take care", "drive safely", "be careful", etc. He has condensed this down to two words to cover everything --- "don't die".

And on that note, I'll wrap this up - hope to see you in Atlanta, and please - don't die.

— Donna

FROM BETWEEN TIME AND SPACE...

A zine for APA TECH by
Linda Struwe Matsushita
2-15-1 Kosobe #302
Takatsuki, Osaka 569
Japan

Well, this has been a long time in coming. It was much harder to write than I thought it would be. I've been away from fandom for quite sometime, and I've lost touch with a great many people. So I'll start off here with a general overview of "things up to now".

After graduating college, I spent about a year plotting and planning for The Big Move. And then it was delayed - wise and mysterious are The Powers That Be. Finally, on Dec. 1, 1984, I landed in Tokyo's international airport. After a week of realignment (due to a 15 hour jet lag) I set out to make my place in the work force as an Eigo Sensei - teacher of English conversation. Incidentally, that phrase is one of the great advertising lies of our time.

The only qualifications one generally needs to teach conversation classes here are 1. to be a native speaker of English, and 2. to have a college degree in anything at all. So now I spend two to four hours a day "teaching" English to a bunch of people who will never really need it. But there is a certain prestige associated with knowing English, and in some companies it can affect promotion opportunities. Most of my "students" are college educated business men who have already studied English for as much as 8 years in the school system. However, how much do you remember from your high school language class? The Japanese schools put a heavy stress on grammar and reading - with no speaking. So mostly I just need to supply some phrases, a situation to use them, and then give everyone the chance to actually say it in English.

Last August the American and Japanese governments agreed to recognize me as married, and the following month the Church also held that view. (Religious ceremonies are not legal here) My husband is Japanese, which means we get to fill out all kinds of forms bilingually and in triplicate.

Also in August, I became the benefactor of a stray tabby cat, aka Sasha. He's a bit of a terror and has done a good job tearing up our tatami floors and paper doors. Yes, we live in a Japanese apartment. They're known here as 'mansion' - it is to laugh. A mansion in Japan is simply a concrete apartment building and has no connotations about size. Ours is 3 rooms plus kitchen - half Western style half Japanese style.

So here we are now up to present times. It's cherry blossom time here and traditionally one goes out among the trees and contemplates the universe while getting smashed on sake.

I'm not foolish enough to try and master the language, but I have made moderate efforts to learn survival Japanese. The task is made more difficult since they insist on using three different writing systems all at the same time. Hiragana has about 50 characters, Katakana another 50, and Kanji has more than 50,000 (but you only need about 3,000 for everyday use). So basically I am illiterate.

Surprisingly, it is not that hard to get by without reading or speaking much. Train station names are written in Hiragana (which I can read), Kanji, and usually Roman letters. Most restaurants have menus with color pictures, so if you can point you can order. Even McDonald's has a picture menu that is shown to all customers. But you'll have to learn how to mispronounce everything if you want to give your order verbally. (No one will understand 'Big Mac' ... you want a 'Biggu Maku') English is the accepted international language here, so there are several newspapers in English as well as a nightly news broadcast.

International symbols are used extensively in the major cities, and there is a great deal of 'color coding' used. For example, there are three types of trains: local, express, and super express. The signs for each type are a different color, so once you've decipher the color system you can tell which is the train that you want.

The most difficult thing about not being able to read is going shopping for food. Optimistically, it can be as much of a challenge as The New York Times Sunday Crossword Puzzle. Here is where all of your analyzing skills are needed most. Is that bag of white stuff salt, sugar, flour, rice powder, or something completely different? Sometimes it's pretty obvious what you're getting, but there have been times when I was greatly mistaken. I was sure I was buying chocolate-cream filled donuts, only to find that the chocolate cream was really bean paste. So usually I stick to products that are kind enough to put a pretty picture on the label and/or their name in English.

Well, time is flying and I must get this off. More about the Mystic Orient next zine.





DEPARTMENT OF THE NAVY

USS ORION (AS-18)
PPO NEW YORK 09513-2570

"WANDERING IN EUROPE"

PNSN ERIC ROMAN NASH

THE NAVY IS KNOWN FOR BEING A WORTHLESS ESTABLISHMENT, AT LEAST AMONG THE SAILORS. HOWEVER IT DOES HAVE A FEW POSITIVE SIDES. ONE BEING ANNUAL LEAVE. ON MAY 2ND A FRIEND OF MINE AND I TOOK LEAVE AND TOURED EUROPE IN THE DISTINCT SAILOR STYLE.

OUR FIRST STOP WAS ROME. IN MY OPINION ITS A BIG DIRTY CITY, EXCLUDING THE TOURIST SPOTS. THE COLLESEUM WAS IMPRESSIVE AS WERE THE MODELS POSING THE LATEST FASHIONS USING THE ANCIENT STRUCTURE AS A BACK DROP. THE VATICAN WAS VERY GRAND, HOWEVER IT WAS BEING REPAIRED SO ALL WE SAW OF THE FACE OF THE BUILDING WAS CANVAS AND SCAFFOLDS. WE MADE A TWO MILE PILGRIMAGE TO THE MCDONALDS, BUT TO OUR TOTAL DISGUST IT WAS CLOSED.

AFTER A QUICK 11 HOUR TRAIN RIDE WE WERE IN GENOVA. IT WAS RAINING AND WE DID NOT CARE TO GO TO THE FLORAL SHOW SO WE DID WHAT COMES NATURAL TO ALL BORED SAILORS. WE GOT DRUNK. THE REST OF OUR STAY IN GENOVA IS A COMPLETE BLUR.

MILANO CAME NEXT. STYLISH CLOTHES IN THIS CITY, BUT VERY EXPENSIVE. WE WANDERED THE CITY AND GOT LOST. WE CAME UPON A SWELL CATHEDRAL; SO WE CLIMBED ON TOP OF IT AND HAD A GRAND VIEW OF THE CITY. MY COMPANION MET A AN ITALIAN GIRL THERE THAT LIKED AMERICANS, BUT THATS ANOTHER STORY. AFTER SPENDING SOME TIME WITH THE GIRL WE HEADED TO NICE.

NICE IS NICE. I AGAIN ENJOYED THE NUDE BEACHS, AND GOT A HELL OF A TAN. THE CANNES FILM FESTIVAL WAS GREAT EVEN IF STALLONE WAS NOT THERE. WE SAW THE PREMEIR OF A FRENCH FILM STARRING SOME FRENCH STARS THE CROWD EXCITEDLY RECOGNIZED.

THEN WE HEADED DOWN TO BARCELONA. ITS A PARTYING PLACE, DISCOS AND DAMES ALL NIGHT LONG. SAN MIGUEL BEER IS GREAT. WE CAUGHT A BULLFIGHT ON SUNDAY. THE SPANISH MEN REALLY GET EXCITED OVER THIS STUFF. ITS EASY TO SPOT TOURISTS AT BULLFIGHTS, THEIR THE ONES THROWING UP.

AFTER BARCELONA CAME MADRID. I MET MY OLD FRIEND OF SIX YEARS, SUE CARTER AT HER STEP HOME. HER SPANISH MOTHER INSISTED THAT I WAS ITALIAN. I GUESS LIVING FOR A YEAR IN ITALY DOES THAT TO YOU. SEEING AN OLD FRIEND WAS GREAT AND IT MADE ME REALIZE THAT IT HAS BEEN A LONG TIME SINCE I VE BEEN HOME.

PARIS IS THE MOST CHARMING CITY I HAVE EVER BEEN TO, BUT I FIND THE FRENCH TO BE A BIT ODD SO WE DID NOT STAY LONG. LONDON IS INCREDIBLE. I COULD FLIRT WITH THE GIRLS AND THEY COULD ACTUALLY UNDERSTAND ME. BEING SAILORS WE VISITED A STRIP JOINT. THE ONLY PROBLEM WAS THAT NO ONE STRIPPED SO MY FRIEND THREW BEER AROUND THE ROOM.

WELL THATS AN ABRIDGED EDITION OF MY FIRST BIG VACATION IN EUROPE. I CAN'T WAITE TILL MY NEXT.

MAILING COMMENTS

ROD: HAVE YOU READ THE NEW SUPERMAN? I HAVE NEVER BEEN A FAN OF HIS COMIC BUT IM CURIOUS TO WHAT THEY WILL DO TO HIM. WHAT EXACTLY WOULD YOU LIKE TO KNOW ABOUT MY SHIP? KEEP IN MIND SOMETHINGS ARE SECRET.

ROXANNE: THE NAVY'S ALRIGHT AS LONG AS YOU ENJOY BEING A MINDLESS PIECE OF MATTER. WHAT IS YOUR SISTER'S RATE?



DEPARTMENT OF THE NAVY

USS ORION (AS-18)
FPO NEW YORK 09513-2570

BARRY: YOU HAVE TO BE 21 TO GO IN THE CASINOS IN MONTECARLO.

DONNA: I SAID HI TO SUE FOR YOU. I THINK SHE'S CHANGED. BUT FOR THE FAR BETTER. DO YOU NOTICE A CHANGE?

STEVE: INTERESTING ARTICLE. IM VERY TIRED OF PEOPLE ATTACKING D&D AND ROCK N ROLL FOR BEING SATANIC. THE PEOPLE WHO BELEIVE THIS RUBISH SHOULD GO FAR FAR AWAY AND LIVE ON THEIR OWN MONOTONOUS PLANET.

CIAO FOR NOW.
ERIC ROMAN NASH



IN referende to ERIC ROMAN NASH-my partner in crime and new found friend. We both decided without much contemplating that we are indeed pacifists. Since we are so peaceful why are we in the armed forces you ones of the quick and admirable minds might ask. THE wrapping paper was beautiful at first -surely the gift within must be magnificent....It was like peeling the fruit and finding it rotten inside...Perhaps I am a dreamer; reality is not pleasant aboard a rolling ship but lo and behold my sea legs are here.... I believe introductions are necessary-so let me not hesitate any further lest my typewriter should reject my well sought out words. I am Tim Haddock otherwise known as the FISH and sometimes the Melancholy Baby. SEX-I am somewhat traditional in these views-but definitely keep an open mind and body if you will. EDUCATION? Just a high school graduate last year-but in due time will have my degree in LIFE or maybe ENGLISH.... This little portion of Europe is golden in the summer time-full body tans are always in style...and picture perfect views to go along with it... ROMAN NASH and I are both personnenmen within the "gray walls of depression" and remain dreamers... OF life that slips beyond holes in space and finds a niche in the perfect utopia..... Am I actually mad- it is the process of going insane that is rough but after achieving that state its not too bad....SO thats me.....wrapped up in one

CHIAO

MELANCHOLY BABY

{TIM HADDOCK}

News of note and merit from Valli Hoski, 228-D South Maple, Oak Park IL 60302 and (312) 383-3864, for the loyal and steadfast readers of ApaTech. June, 1986.

Comments AT 395

Cover	Variety, eh? Does this mean A/T has now hit the Top Ten?
ToC	Donna, I gave you a \$10.00 check for postage when Joa and I visited in May.
Eric	Re: Santo Stefano. I looked in my atlas, and you sure are out in the middle of somewhere between Corsica and Sardegna. But the nicest thing about your trip to the Riviera was McDonald's? If you like strong coffee, you should try espresso at a real Italian coffee cafe, or "bar". To me, it's one of the best things about Italy. Did you try any food in the Riviera? If not, why not? What's Sardegna like? Have you tried it's food? How long do you think you'll be stationed there for?
Bonnie	Thanks for your hospitality during our visit in February. We might even go back again this summer, so Joa can see MSU in its green.//I liked your geo-graphic postcard!
Sam	Gee, but this is dangerous ground. You see, I have a master's in education, specifically in instructional systems technology (or, how to plan, develop and give corporate training). From what you say, something is askew with the program at NEIU. I have to hesitate before throwing all babies out with the bathwater, and condemning all schools and educational systems. But what is a mystery to me, even today, is how can people make it through school without learning reading, writing and counting? Even without homework? Now, I am not fantastically literate in the sciences. Your "kiddie level" physics course is probably just my speed, since all I had was introductory natural science at college. But how has the overall educational system gotten so backlogged and desperate? It is beyond my current understanding.
Barry	Are you really only 30? Funny, I thought you, Higgins and I were already past the hill and over 30.//Re yr ct to Donna "Parents" Proni: if you and she talked it out about kids at Ishercon, I'm sorry that I missed it.//Gee, you writing reads just you sound when you talk. And that reminds me how nice it would be to see you more in Chicago. I know, you're very busy with that school stuff (I know, I know, research, research.) Like I told Bonnie (up above), maybe we'll come and visit MSU sometime this summer or fall. //I <u>really</u> liked your narrative on observing Halley's comet. Keith, Joa and I tried to see it one night in April out at Fermilab. But the moon was almost full and the ambient light blew all visibility away.//Don't mean to sound whiney, but I do want you to know that you are missed in Chicago.

Guy	<p>Howdy.//Re yr ct Donna re her wordprocessor: all right, so what software is it? I've use Multimate at work, but used WordStar extensively before. Both are alright, but I think I know WordStar's advanced features better. What do you usually use and why do you like it?//You seem to share Higgins' philosophy that big, cheap cars are more cost-effective than today's subcompacts. But may yours work better than his usually do. I'm always amazed that 3 people can fit into his front seat. Three average types types that is. When I've been riding in his back seat, I've gotten vertigous as the is so huge it seems to sway down the street and around corners.</p>
Rod	<p>Re yr ct me about my page ct: sorry, but I was using new wordprocessing software and a new printer. The page breaks and type font (cpi) were both a bit off, hence the 4 pages of text spread over 6 pages. Is this zine compressed enough for your standards?//Re yr ct Bonnie on maps being fun: I find maps fun to play with but I don't know why. Wherever I've travelled I usually try and get maps of the area or country. I don't like driving unless I have an accurate map in the car (especially in Chicago). While on long drives as a passenger, I'll usually flip through the road atlas and retravel routes and trips I've taken. I'm not sure what's so fascinating about maps, but yes, they sure are interesting.//I REALLY LIKED THE FERMILAB CARTOON!</p>
Marty	<p>Thanks for taking the time in May to have breakfast with us, when Joa & I were in Kazoo. It's always nice seeing you. So when are you going to come and visit Chicago?//Re yr new found conservatism and Neighborhood Watch program: it doesn't stop when you move to the suburbs. I've become very curious about people who are in our neighborhood, especially if they don't look right. (Cautionary note: it is very easy to cross the line into prejudice in considering who does and does not look "right".) I've been known to ask people if they need directions or something if they look like they don't know where they are. Or, while driving through our neighborhood, I will drive several times past something that looks suspicious, just to check it out. It may sound like "nosiness" but as long as it's kept polite, I think being aware and asking questions is better than ignoring possible trouble. Then again, I don't usually say, "hey why are you here? Who are you anyway?"; rather, I just look a lot. And this comes from someone who still considers herself a basic liberal.//Speaking of videos, Higgins is coming over tomorrow night to just "veg" out with us, and watch "Real Genius" on the VCR. We rented the VCR, rather than buying, so that I could watch Italian movies for my class. We've also used it to see a lot of movies on tape. We've not bought a single taped movie, etc. since we're only renting the unit, and I'm glad. The ability to stop a movie one night and finish watching the next was very new to me. The first few times I had to really convince myself that yes, it was ok to go to bed and just finish watching it the next day. Strange how hard the straight linear viewing habit was to break.</p>
Donna	<p>So what's new? Thanks for your crash space and conversation during our visit in May. That weekend Joa & I finished seeing Niagara Falls early on Saturday so we also drove up to Toronto. Spent Saturday afternoon and evening in a whirlwind tour and then stayed in Cambridge, Ontario at the <u>Satellite Motel</u>, complete with a early 60s rocket ship out in their parking lot. Joa's got a great time exposure of their neon illuminated sign and ship. Very appropriate way to end a weekend that started with a visit to your raygun factory, cum residence.//Somedays I wish we in GT would start having children already. Maybe then, with some compatriots, I wouldn't find the idea so scary. Bob and Connie don't really count, for me, because I see them so rarely. You, Gretchen, Roxanne and I are all much closer to the situation that is on my mind these days. Are you and Tullio going to run a "summer camp in Kazoo" for all the techie kiddies? It seems like a great idea to think on.</p>

Late Nights All Alone With A Test Tube, Oh, Oh-Oh, Oh

an APA-TECH zine by Barry Gehm

Once again, this will not be as long a contribution as I would like, since I am still snowed under with science. This is not to say that there hasn't been progress since the last zine. The grant application I was working on got sent off on time (we won't find out if we get anything for many months, however). But once we finished that, my professor had a nasty surprise for me. He hired two assistants for me! Two undergraduates that had been working in our lab part-time are now working full time (well, nearly: one about 40 hrs a week and one about 30-35) and I am supposed to keep them busy. If this sounds good, it is, mostly, but it's also got its disadvantages. These kids are fast (it's easier to be fast when somebody else designs the experiment, than when it's your design and you're critiquing and modifying it as you go along -- also when it's someone else's experiment you're not as paranoiacally careful as when it's your own -- and I've never been the world's fastest lab worker, myself) and the upshot is that I'm designing as many experiments in a day as I used to get done in a week -- sometimes more. This is great as far as getting data is concerned, and I'm making real progress. But it conflicts mightily with my natural research style, which is to carefully plan and consider each experiment and try to work out all the possible pitfalls before starting. No time for that now! It's also very draining mentally. Sometimes I go home convinced I'll never be able to think up another experiment, even though I know I'll be expected to come up with five or six more the next day. Somehow I do it (usually). Still, it's bringing the PhD ever closer (if I don't burn out first). And no, don't ask when I'll be finished. When I know, you'll know. Also, there'll be a stirring in the Force.

Revel Without A Cause

Actually, Bill Higgins coming to town is always cause to celebrate, and doubly so when Sam Paris comes along. They came out for the Fourth of July, although we didn't do any Fourth of July stuff. Instead of watching the Liberty Weekend hoopla ("Give me your tired, your poor, your huddled masses yearning to impersonate Elvis Presley...") on TV, we visited some of the old MSUSFS people who are still around, hit the bookstores (of course) and went canoeing on the Red Cedar, the river that runs through campus, something I had not done in the nearly ten years I've been at MSU. The canoe excursion was a lot of fun, with Bonnie Jones and Sam in one boat and Bill and me in the other. It had been a long time since I had paddled a canoe but after a shaky start where our boat kept getting crosswise in the stream (not at all effective when you're trying to go upstream) we managed to keep up with Sam and Bonnie. Bill had had even less experience with canoes than I, so mostly he played the ukulele and lent an oar in the more difficult spots (and no, he never got the two confused). The river was low and there were lots of snags, which we negotiated successfully until, on the way back downstream, nearly in the home stretch, I neglected my duties and lay back in the boat to relax my back. A submerged tree branch lifted one side of the boat and Bill and I were in the water. Fortunately the river was low enough that we could just manage to wade to the bank, right the canoe and continue on our way. Bill even managed to save his ukulele ~~1047333//70//30/303/0//~~ We managed the rest of the way without incident, and squished back to the car singing "Yellow Submarine." I think Bill recognized the humor of the situation, although he didn't seem to be laughing at the time. Sam and Bonnie seemed to find it funny enough...

"It's not really faster than a quill pen, but it's easier on the goose."

Rod and Greg have both been talking about word-processors lately, and I thought I would say a little bit about the one I use. This is being written using Multi-Mate on an IBM PC in my lab. (Neither the computer nor the program are mine.) I am fairly well satisfied with Multi-Mate, though my first love is DEC's EDT run on a VAX. Multi-Mate does have a speller/dictionary, using a 20,000 word Merriam-Webster database. My major gripe about the program is that it is Stupid With Hyphens. It doesn't know the hyphen in a hyphenated word is a break-point for starting a new line, so if you have a long-hyphenated-construction that won't fit at the end of a line, the whole thing gets dumped onto the next line, leaving a short line behind. To fix this you have to manually insert a space or a soft hyphen, both of which produce unacceptable results if the hyphenated construction gets put back on one line by reformatting or other alterations. Also, the speller program doesn't understand hyphenated constructions like "faster-than-light"; instead of breaking them down and checking the spellings of the individual units, it flags them as misspellings. My other main complaint is that both the main dictionary and the custom user dictionary are stored in some encrypted form, so there is no way to get a printout of, or directly edit, your personal dictionary. There is no convenient way of removing a misspelling in it, either.

Its major strong point, and presumably the source of its name, is the large number of printers whose control codes are already stored in tables on one of the floppies, so that you can get nearly all the special features the program supports (e.g., sub- & superscripts, boldface, strikeouts, etc.), on any of a wide variety of printers. It is compatible with the Brother IF-50 interface, Greg, and will justify by inserting whole spaces between words, but not by inserting fractional spaces between letters and words ("microjustification"). This is according to the manual; I haven't used it with a Brother. The printer we use is a TI Omni 800/Model 855 dot matrix, which has pretty high quality output, I think. It has one unusual feature which MultiMate isn't set up to take advantage of, but I have customized the printer table to make use of it: there are three slots for ROM font cartridges in the front, and you can switch between them electronically. I have arranged to have a couple of odd button-hook shaped characters, part of the IBM extended character set, translated as font-switchers. Our second font is Greek letters and math symbols, so we can drop α 's, β 's and so on into the text without having to change print-wheels. Useful for scientific writing, or talking about our old fraternity days in $\Psi\Phi$.

As far as I know, MultiMate is only available for the PC and its relatives.

"Don't worry, you'll get your money. You have my word, and my word is my bond. It may take twenty years, but that's the way bonds are."

Shortly after the last issue of APA-TECH hit the mailboxes (too shortly, I think, to be an example of the power of the press) my refund from Windycon arrived. Anyone considering being a panelist, gofer, etc. for them can rest assured that eventually (i.e., within eight months) they settle up.

"Mailing comments! Get your fresh mailing comments!"

GT"555"B: The statistics tell a sad story. Consider the frequency table below (frankings and 555 Times excluded).

n	Number of members with n contributions in volume 7
5	2
4	0
3	2
2	9
1	8
0	9

What can we do? I suggest ritual public humiliation of non-contributing members. Greg and I have already started on Bill.

Guy "Easton" Consolmagno: Your comparison of the American and African (European-model) educational systems was very thought-provoking. Richard Feynmann says much the same thing about Brazilian universities in Surely You're Joking, Mr. Feynmann. I'd like to believe that American schools were training students to be creative and thoughtful, in preference to rote learning, but I'm not sure I do. You might convince me that our schools were not as effective as theirs at stifling the capacity for original thought that some students start out with. \\ If your students in Illinois really knew the difference between facts, opinions and wishes, they were a pretty remarkable group. That already puts them ahead of the President of the United States and a number of NASA administrators, to pick two obvious examples.\\ I was amused to hear about the collisional formation of the Moon being called the Schmoo theory (comes out any way you like depending on how you cook it). The New York Times (one of the very few newspapers whose science coverage is worth the paper it's printed on) has also covered it since the article in Science I referred to; one thing I got from there that I didn't catch in the original article bears on your point about lunar sodium and potassium deficiency. Supposedly they were volatilized and lost due to the high temperatures generated by the collision. This sounds plausible to me but I am not really qualified to have an opinion. \\ Your ct to Marty about positrons being electrons travelling backwards in time got me thinking maybe that's where all the missing antimatter is: equal amounts of matter and antimatter were formed in the Big Bang but all the antimatter "went the other way." This idea has several holes in it but would probably do for sf if there were some way to build a story around it.

Roxanne "Dayton" Shields: Nice ish! 12 pages and all fun to read. I like your writing style. \\ The Hamfest/Berserker sounds like a great time. Wish I could have been there. Unfortunately the timing was just impossible for me, even if I hadn't been taking your "no crashers" rule seriously. Can I come next year huh can I huh can I? \\ Amy Schaefer didn't recognize me at the picnic either. Of course, that's because we'd never met, but I consider that a pretty shabby excuse. \\ Thanks for your kind words on the comet piece (see also below).

Donna "Lazy" Proni: (this style of labeling mc's is going to get me in trouble eventually) Re yr ct me about other peoples negative reports of the comet causing you to miss it: sue the bastards. \\\ I, too, thought the bamboo rocketcopter was going a little too far, and said as much in my review, which will be in the next PYRO. I know it's not hard sf, but I figured we could do wid a little cultcha.

Guy "Margins? We don't need no stinking margins!" Wicker: "All that's needed is a couple of years and about 10 million dollars." Sounds like my PhD project. \\\ Fugu tastes like liquid nitrogen?! There's a comment hook if ever I read one. OK, I'll bite: how does one go about tasting liquid nitrogen? \\\ Thanks for the postcard from Japan. If I ever go anywhere, you'll get one from me.

Susannah "Crumbcrunchers" West : I hope to be able to submit something to Starwind eventually, but currently APA-TECH and PYRO more than fill all my available writing time.

Steve "Rialto-Bijou" Salaba: Liked the cartoon, didn't see the movies. \\\ Re the "satanist sf" letter: I warned you you'd get on weird mailing lists if you voted for Reagan.

Rod "Transporter" Smith: My discussion of my word processor (above) may not be of any direct use to you but it might help you think about some features to look (out) for. Your talk about spelling checkers has started me wondering how long it will be before word processors start to have syntax/grammar checkers. It seems to me that the program would have to have a fair degree of "artificial intelligence" (what ever that is) to be able to detect things like lack of subject-verb agreement, writing its for it's and vice versa (one of your most frequent lapses), or constructions like "between you and I." Of course, different degrees of fussiness would probably be available; you might get celebrity grammar checkers with the biases of your favorite language critic built in -- William Safire's Grammar Guard, Edwin Newman's Writer Righter. Anyone care to offer a prediction how soon these will be on the market? \\\ Your franked material on the Shuttle just renews my anger at the blatant intellectual dishonesty which flourished in NASA. Science is among the noblest of human pursuits because it says that wanting to believe something is not sufficient cause to believe it, that comfortable ideas should be treated with skepticism precisely because they are comfortable. At least, that's how it's supposed to work. Then one reads about the committee responsible for determining the probability of solid booster failure receiving three independent reports putting the odds at around 1 in 100, then deciding on a value of 1 in 100,000 as the "official" risk. These people are no better than the "scientific" creationists.

Marty "Incorrect" Franz: Let's see, last time I called you a blasphemer, and the time before that, a fascist. You didn't say anything to offend me this time but it seems a shame to break a tradition, you complete kneebiter.

Greg "Mud" Ruffa: You seem to be Mr. Postmailing. I'm not sure whether that means you take deadlines more or less seriously than the rest of us. \\\ As I wrote above, MultiMate will justify proportional text, but I don't think it's available for the Amiga. \\\ So where are you now that Shuttle/Centaur has been cancelled? Much as I envy you for having a job that actually does something to push back the frontier, this does not seem to be a good time to be

employed in the space industry. \\\ Should I know who Bruce Cordell is? \\\ Bonnie's name is on the map -- lower right-hand corner. \\\ This Michael Tuck person... I wonder if he realizes that five billion people means everybody on earth; he certainly missed a chance to be even more sensationalistic there. His "worst case" scenario would seem to involve breaking the plutonium up into five billion lethal doses and forcing everybody to swallow one, instead of diluting it out in the ocean, etc. And the shuttle doesn't launch over any "major population center." I wonder how he would react if he knew that American and Soviet atmospheric bomb tests released six tons of plutonium into the atmosphere before they were banned? Nevertheless, he does, as you say, have a point. I tend not to be overly paranoid about plutonium, whose hazards are frequently exaggerated, but it should be remembered that Pu-238 is about 300 times more dangerous than the more familiar isotope, Pu-239. I hate to ask you this, but you've had a lot to say about GT's mission of educating people: did you request an opportunity to present an opposing opinion? ("Now, speaking in favor of dropping plutonium on cities, Mr. Greg Ruffa...") \\\ I agree with you entirely on SDI. Even if it works exactly as advertised, it will only mean that we'll spend a trillion or so dollars to force the Soviets to deliver their H-bombs by some other method, like cruise missiles or panel trucks. The delivery system of the twenty-first century might well be the diplomatic pouch: bombs assembled from smuggled-in components could be secretly planted in the enemy's cities, to be exploded by coded signal. There's an Analog story in there somewhere, too. \\\ Steve's cover actually has nothing to do with the polar bear business (I think). The true Secret Origin is that Todd "What hath Todd wrought?" Johnson has cracked the control system on those Teddy Ruxpin toys and can create his own tapes or control it in real-time using a joystick and the Collar of Obedience. Bill and Teddy duets were a hit at Capricon. The ugly shadow of automation falls across my position as Bill's sidekick.

Bill " " Higgins: I never found any money, but you did leave your "Raw Bits" T-shirt behind. \\\ Don't you know that good manners demand that you write me a short note saying what a good time you had and how much you enjoyed being dunked in the river?

General: Thanks to everyone who had kind words about my piece on the comet (especially Valli Hoski, who phoned in her mailing comment after reading it; that's what I call instant gratification). Jamie plans to reprint it in PYRO; I mention this so you won't think I'm double-submitting.

How you should have voted for the Hugo for Best Novel.

(Justifications supplied upon request.)

1. BLOOD MUSIC
2. ENDER'S GAME
3. FOOTFALL
4. THE POSTMAN
5. No award
6. CUCKOO'S EGG

Oh well, five pages isn't too shabby. Hope to see you all next time, and remember: "ritual public humiliation." Petitions for exemptions should be accompanied by a \$25 processing fee.

TAKE ME OUT TO THE BALL GAME by Bonnie Jones
129 Burcham #1, East Lansing, Mich 48823

I've gotten involved with my first team sport, softball. My grammar school had no organized sports, and in high school I had little time or interest or the physical fitness necessary. I started my first sport two years ago when I started at Michigan State. Barry Gehm needed someone to play with and he gave me the option of tennis or racketball. I choose racketball because I wouldn't have to face the embarrassment of hitting the ball into someone else's court. In racketball, the ball on goes only so far before it hits a wall. I never worked at physical fitness until last June, in Washington, when I had access to a gym and nothing to do in the evenings.

Well, after my complaining for a whole year, the geography students at MSU finally got organized and formed the Geography club, where I was forced-into elected to be one of two representatives for the club. (Did I say this was going to be a short story?) One of the ideas for activities for the club was a team sport which turned out to be softball. I am not a good player, but felt obligated to play. To play co-rec, we have to have an even number of males and females, either four or five of each, and we are somewhat short of women to play, so I play. At least, I am not the worst player on the team.

Last term, we won two games and lost four. This term, we were 3 and 4. (not much of an improvement) Winning our first game was very exciting. At the end of six innings, we were tied 10-10. We took the field and kept the enemy from scoring with a couple of great catches. Then it was our turn. I was up first and walked. The next two batters also walked. Bases loaded. The next batter hits a line drive to left field. The shortstop scoops up the ball and throws it to first for an easy out, then the first baseperson throws the ball toward home. Meanwhile, I am running furiously toward home plate, sure that I'm not going to make it. The pitcher is standing on the plate and moves off the base as I cross it and I hear the umpire yell "SAFE". Confused, I turn to see the pitcher spread-eagle on the ground. It seems that he and the catcher had done an intricate dance which looked like two bodies sharing the center of gravity. The feelings that I had at that moment, the camaraderie, the thrill of scoring the winning run, with everybody cheering and hugging were wonderful. I remember similar feelings standing on stage at the end of a good performance when the audience shows its appreciation copiously. Perhaps now I understand why team sports are considered an important part of education because learning to work in groups is an important skill. I know that if I hadn't showed up for the first game of the season, we wouldn't have had enough people to play and we would have to pay \$10 forfeit fee if we wanted to keep playing.

On the subject of education, This summer I am taking a 100 level psychology course as a prerequisite for a course in perception and as usual, before the first test, the question of what is going to be on the test comes up. The teacher calmly points out that everything that he covered in class and in the book is relevant and that it is up to us to decide what is important and how much time we want to put into studying. He also said that the better a school is, the less the teachers tell the students what is important and what is not. Well, as you can probably guess, the students did not appreciate his response. What do they expect? This is college, where we are supposed to learn how to think for ourselves. And to make matters worse, the students that asked the question were seniors, one of them a packaging major. Yes, Michigan State is one of the few schools where you can get a degree in packaging.

The point I am trying to make is that most of the students aren't enjoying the class. They think the teacher is old and outdated and the subject matter boring. Some of the examples he uses are from when he was a pilot in WWII. The course is aimed at the students with an interest in science. I'm having a great time. But I'm not sure if its because I have an interest in science, a well rounded background or just because I know most of his references. Or is it that the average (packaging) student is just interested in her field so she can get a job and is not interested in the rest of the world. Maybe I am unusual because I am interested in just about everything. Is there something wrong with gaining knowledge for knowledge's sake, picking up knowledge that you have no immediate use for? Well, I don't. (End of diatribe.)

Greg: Thanks for the stats on monkeys and typewriters. Have you seen the car sign that says "OLD FART ON BOARD" or my favorite, "EX-HUSBAND IN TRUNK".

Rod: Volkswriter 3 has a 170,000 word main dictionary, plus a user-definable dictionary. It also counts the number of words in your document. Of course, you would also need the IBM-PC emulator software to make compatible.

Guy W.: Could you give a simple explanation of what amorphous materials are for us less technical types? I was wondering if you had the chance to visit Donna's sister Linda in Japan, but I don't know if you even know her.

Guy C.: I also went to a small college for my undergraduate degree. With 10,000 students, Northeastern Illinois University isn't much bigger than my high school, Lane Tech with 5,600 students. The only problem was that UNI (NIU is Northern Illinois U.) is a commuter school so the sense of community is missing.

*See you in Atlanta
Bonnie*

Letter from Easton

Guy Consolmagno
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As you can tell from the format of this apazine, I am no longer chained to my fifteen year old Smith Corona anymore, but I have joined the age of the micro-computer. Three things pushed me.

First of all, I had had access to a Compaq last term, which was fabulously useful for doing grades. I don't know how professors curved three different lecture classes taking a common final, with various quizzes and tests all having different point values, in the days before spreadsheet programs.

Second, I will be teaching a planetary science course next year, which I would like to use as a testground for a textbook I've been involved in writing. It dawned on me that a PC would be a great way to prepare the textbook and the figures. Up to now it had been typed at three different places (my co-author, Martha Schaefer, and I have moved several times since we started working on it at MIT in 1983...she's in Washington now) and it'd be good to have it all in one format at one place. Plus, integrating text and figures meant that maybe I'd finally get around to preparing the figures. So I decided to go into the desktop publishing field, and went looking at 68000 based computers.

The third thing pushing me into buying now was that Lafayette was offering interest-free loans and a generous discount program, and my spendable income has just taken a sizeable jump because of me moving into McKelvy House (see last issue).

Atari vs Amiga vs Mac: If you are very up on these things, you can probably tell by looking at this page which machine I got. One hint, if you're confused, is that I tend to avoid the standard typefaces that everyone else with these machines uses.

From reading all the magazines, I concluded that the Atari was the cheapest, the Amiga was the best, and the Mac had the most software. Friends of mine in Boston have an Amiga, and I am thoroughly convinced that it ought to be the machine of the future. Unfortunately, I needed a machine for the present. So I bought a Mac.

The original configuration I got included a 512K Mac with an internal 400K drive and an external 800K drive, plus printer. This was a thoroughly stupid thing to do. First of all, the unenhanced Fat Mac, which is what I had, didn't come with an operating system that knew how to recognize an 800K drive; so that had to be kludged up by the dealer (in a thoroughly unprofessional way). Second, one has to keep track of which disks can fit into which drive; and if you want to make a backup copy of an 800 K disk, tough luck.

Fortunately, the College (though whom I bought the machine) didn't put through the purchase order until they got my say-so that I was satisfied. So I carted my Mac back to the shop and traded it in on a Mac Plus, which works just fine, thank you.

Wish I had a hard disk, though! But I couldn't afford that. Or a Laserprinter.

Anyway, since everyone here knows more about these machines than I do I won't spend much more time except to say that I recognize all its weak points and still think it's fantastic.

(Remember, I was in Kenya when they came out and only read about them in

magazines. Living in Nairobi was weird that way. It was like living in 1975, and so it felt rather familiar, but reading American magazines from 1985 was like reading science fiction, and it was really hard to believe that that stuff was real.

Related story...a fellow volunteer came home, went to visit some Yuppie friends of his in a condo in Washington DC...they said, "welcome back to the real world!" His reply--"this isn't the real world. Kenya is the real world. That's how virtually everyone else in the world lives. *This* is fantasy.")

Other new toys: The department has gotten our Celestron C-6's; the C-14 is still to come. My, they are nice telescopes. They come with a 26mm Plossl eyepiece, good only for 30x, but with such a bright wide field of view that they make deep sky observing a breeze. We'll get a high-powered Orthoscopic for planet viewing.

The department has also gotten a bunch of ATT PC's for our labs...a bunch of other new lab equipment...it's incredible being at a place that has money to spend! Seriously, if anyone out there knows a high school senior who's looking for a place to go to school, they could do worse than here...

Movies: I thoroughly enjoyed Labyrinth (spelled right? I don't have a dictionary), though it didn't turn out to be quite as good as it started out being.

Likewise, I enjoyed Aliens . . . so when some friends suggested going out to see it again a couple of nights ago, it seemed like a reasonable thing to do. Besides, it was hot and muggy and sitting in an airconditioned theatre seemed like a good idea.

Well, the movie is all about these creatures that crash through walls and do horrible things...very spooky...and as

we were sitting inside watching, we could hear thunder outside, and rain...at times it was hard to tell which was the movie and which was reality. Added to the atmosphere.

Then we started hearing dripping noises...then pouring water noises. People in the front of the theatre started getting up and moving to the back. The water noises got louder. An usher came and pointed his flashlight at the fire door at the front of the theatre, and you could see water pouring through the crack between the doors--at waist-high level! People started getting up and nervously edging to the back of the theatre. Then with a crash, the doors buckled and enormous amounts of water came pouring through the door! Panic! People screamed, went running to the back of the theatre, knocking each other about!

Turns out, some drain had gotten blocked, and water filled up the doorwell. After the initial flood the volume of water was not dangerously high--only about knee deep at the front of the theatre. But they stopped the film and let us get our money back. I just took a re-admit ticket, which I may never use--the show we saw was every bit as dramatic as the movie, and well worth \$5!

Another song-and-dance from W. Skeffington Higgins. You're reading Spinhairiscope Media publication number Twenty-Four, for Apa-Tech 42. This medium is massaged at 853 Lorlyn Drive, Apartment 1A, West Chicago, Illinois 60185. Phone: (312)293-1858. Office address is MS 355, Fermilab, Box 580, Batavia, Illinois 60510.

What Ever Happened to What's-His-Name?

I've been alive and well but, I am ashamed to admit, not writing much the last year or so. Recently, though, I've had reason to hit the keyboard again, but not (for this deadline, at least) for Apa-Tech. So in lieu of good apa stuff, here's a sample of things I've been doing for the Museum of Science and Industry's new Crown Space Center exhibits.

What Significant 18th-Century Books Dealt with Space Travel?

Daniel Defoe, famous as the author of Robinson Crusoe, also penned The Consolidator, or Memoirs of Sundry Transactions from the World of the Moon in 1785. The Consolidator is a machine powered by a strange combination of spirit and mechanism. With it a lunar citizen, Mira-cho-cho-lasmo, travels to Earth. Its moving spirit feeds flames within the Consolidator which are "so ordered as to move about such springs and wheels as kept the wings in most exact and regular Motion, always ascendant."

A more famous tale of a visit to Earth by beings from other planets is Voltaire's Micromegas, published in 1752. Micromegas is a philosopher from an enormous planet circling the star Sirius. He is eight leagues-- 24 miles-- tall, and travels with a companion he meets on Saturn, a comparatively small world whose inhabitants grow hardly taller than a mile. They don't need a spaceship: "Our traveller had such a marvelous knowledge of the laws of gravitation, and all the forces of attraction and repulsion, and made such good use of his knowledge, that, sometimes by means of a sunbeam, and sometimes by the help of a comet, he and his companions went from one world top another as a bird hops from bough to bough."

Voltaire provides this account of the transit of the solar system: "Meanwhile our two inquirers set forth on their travels; they first of all jumped upon Saturn's ring, which they found pretty flat, as an illustrious inhabitant of our little globe [here Voltaire is referring to Christian Huygens] has very cleverly conjectured; thence they made their way from moon to moon. A comet passed quite near the last one, [and they boarded it] together with their servants and their instruments. When they had gone about a hundred and fifty million leagues, they came across the satellites of Jupiter. They landed on Jupiter itself, and remained there for a year... Quitting Jupiter, they traversed a space of about a hundred million leagues, and, coasting along the planet Mars, which, as is well known, is five times smaller than our little globe, they saw two moons, which attend upon that planet, and which have escaped the observations of our astronomers. [The two moons of Mars, Phobos and Deimos, were not discovered until 1877, 125 years after the publication of Micromegas.] ...At last they perceived a faint glimmer; it came from our earth, and stirred pity in the minds of those who had just left Jupiter... They passed over the tail of the comet, and meeting with an aurora borealis close at hand, they got inside, and arrived on the earth by the northern shore of the Baltic Sea, July the 5th, 1737, new style."¹

Micromegas is a philosophical satire. At first the giants have trouble deciding whether the Earth is inhabited, since all creatures here are invisible to their naked eyes. But using a microscope they soon discover and befriend a shipload of natural philosophers returning from a polar journey. Voltaire's grasp of science, which was excellent, is much in evidence in the dialogue.

One 18th-century novel which features a voyage to the Moon in a flying machine is John Daniel, by Robert Paltock (1751). Castaways on a desert island build a flapping-wing vehicle. Sailing into space, they are turned upside down at the point where the Moon's gravity exceeds the Earth's. They right their craft and descend to a rugged, mountainous land where they meet cave dwellers with copper-colored skins. Of course the days and nights are extremely long and an enormous "moon" hangs in the sky.

Auf Zwei Planeten

Percival Lowell's speculations about life on Mars had an enormous impact on popular culture around the world. A number of writers were inspired to use the idea of intelligent Martians in fiction; some of these turn-of-the-century stories, such as Edgar Rice Burroughs's books and The War of the Worlds, are still widely read today. Such adventures played a vital role in inspiring an interest in astronomy and space flight in

young people. We know that the Wells book aroused young Robert Goddard's imagination.

Another book which had the same effect on youth in the German-speaking world was Auf Zwei Planeten, by Kurd Lasswitz. Unfortunately this book wasn't translated into English until 1971 (as Two Planets), so it had no impact in this country. As the novel opens, a balloon containing a group of polar explorers reaches the North Pole, where it is sucked into the antigravity beam supporting the space station of the Martians. The occupants discover a superior utopian culture. Martians have mastered space travel, covered their planet with canals and moving roadways, and defeated hunger by inventing synthetic food.

Lasswitz's treatment of space travel especially caught the fancy of young Austrians and Germans. In addition to antigravity, the Martians have perfected a "Repulsor" which moves a ship by the controlled burning of an explosive substance-- a fairly realistic description of rocket travel. Some care is also taken to describe the mechanics of trajectories and orbits in a believable way.

Wernher von Braun wrote, "I shall never forget how I devoured this novel with curiosity and excitement as a young man... From this book the reader can obtain an inkling of that richness of ideas at the twilight of the nineteenth century upon which the technological and scientific progress of the twentieth is based."³ Eugen Slinger, the Austrian pioneer known for his studies of reentry aerodynamics and of "propulsion systems," read Auf Zwei Planeten while in school. Encountering the book's accounts of space stations and flights to Mars, he said, "I grew very enthusiastic and wanted to follow such work as my profession."⁴

Possibly the best tribute to Lasswitz was that the Berlin rocket experimenters named some of their early liquid-fuel rockets "Repulsors", after the device in the novel.⁵ These erratic, homemade missiles were the direct ancestors of the V-2 and the Saturn V.

What Celestial Features are Named for Science Fiction Writers?

During the Space Age planetary probes have returned a wealth of new information about the surfaces of other worlds. Since Giovanni Riccioli published his map of the Moon in 1651, astronomers have honored people by naming craters after them, and it was natural to give some features on Mars and the Moon the names of some SF writers.^{6,7}

Below is a list of craters named for authors and other individuals of interest to the Spaceport exhibit.

THE MOON		
Jules Verne	36 S	147 E
Hugo Gernsback	36 S	100 E
Konstantin Tsiolkovsky	28 S	130 E
H.G. Wells	42 N	122 E
Willy Ley	43 N	155 E
Cyrano	21 S	157 E
Sergei Korolev	5 S	150 W
Giordano Bruno	34 N	107 E

MARS		
Edgar Rice Burroughs	72 S	243
John W. Campbell, Jr.	54 S	195
H.G. Wells	60 S	238
Stanley G. Weinbaum	66 S	245
G.V. Schiaparelli	3 S	343
Percival Lowell	52 S	81

DEIMOS (Smaller satellite of Mars)		
Johnathan Swift	20 N	140
Voltaire	35 N	350

Different celestial bodies have different systems for designating latitude and longitude. On the Moon, latitude and longitude follow a system much like the Earth's: Latitude is measured as degrees north or south of the equator. Longitude is measured as degrees east or west of a prime meridian, so that the maximum value it can have is 180 degrees East or 180 degrees West.

On Mars and other bodies, all longitudes are measured in degrees west of the prime meridian, so they range from 0 to 360. No "East" or "West" designation is necessary. For example, instead of being roughly at 90 degrees East, the city of Calcutta would be at "270 degrees" instead in such a system.

Phobos and Deimos, the satellites of Mars, are irregular bodies and not even close to spherical, which produces headaches for mapmakers.

John W. Campbell has to share his crater on Mars with William Wallace Campbell (1862-1938), an astronomer who studied stellar motions and the speed of Saturn's rings. He was also president of the University of California for a time during the 1920's.

References

1. Voltaire, Micromegas.
2. There is no footnote 2.
3. Wernher von Braun, in Epigraph to Kurd Lasswitz, Two Planets, Southern Illinois University Press, Carbondale, Ill. 1971, p. 7.
4. Eugen Sänger, interviewed in Shirley Thomas, Men of Space, Chilton, 1962, volume 8, p. 36.
5. Willy Ley, Rockets, Missiles, and Space Travel, revised edition, Viking Press, New York, 1958, p. 148.
6. Carl Sagan, Broca's Brain, Random House, New York, 1979, pp. 160-175.
7. Patrick Moore, Guide to Mars, W.W. Norton, New York 1978.

Mailing Comments on Apa-Tech 40

Cover: Good cartoon, Steve, but non-Midwesterners may need some explanation. "Teddy Ruxpin", a hot toy last Christmas, is a robot teddy bear with a stereo cassette player in his back. One channel of the cassette holds a story, songs and so forth which emerge from Teddy's speaker. Big deal. But the other channel holds a series of coded squeals which control servos that move Teddy's eyes and mouth. So he "tells you a story", just like those fancy robots at Disney World.

Todd Johnson doped out the format of Teddy's control tracks, built a box that could duplicate the signals, and started making his own tapes for the bear. He asked me to play some songs for him. At Capricorn Teddy made his fannish debut, singing in my voice and in Leon Redbone's. There is some speculation that robots may replace folksingers in the near future, hence the concern Barry Gehm expresses in the cartoon.

Kod-- "The Marching Morons" and "The Little Black Bag" are both stories by Cyril M. Kornbluth, a Futurian writer who died in the late 50's. The great point of TMM is not the rather bogus eugenic argument of the premise, but rather that the future society of Morons is uncomfortably similar to our own. Big, shiny cars with lots of dials on their dashboards and lots of noise under their hoods are taken to be good cars. "Would you buy it for a quarter?", repeated often enough and loudly enough, is taken to be a witty aphorism. An actor, sufficiently warm and charming, spouting simple-minded phrases, is taken to be a good President. (It's been a while since I read the story; I may have some of the details wrong.)

Roxanne-- Why are there so many brown rabbits in Dayton?// Yes, you have rented a wonderful house, and I for one am jealous. Satisfied? I especially liked the gentle hill in the back yard where one can lie down and look at the stars.// Re technocracy: you're not the first person I've heard claim that two classes are emerging, one that understands technology and uses it, and one that just watches TV. Neil Rest suspects that burgeoning microcomputer power may eliminate a lot of paper-pushing jobs in the nineties. One person supervising a lot of Medicare-claim expert systems and some typists may replace five or six who now process claims. Not just blue-collar, but white-collar folks may be out of work if this comes to pass.

Barry-- Your trials with polar bears raise another question: If polar bears are not members of the mink family, how did this rumor get started? It seems to be a pretty widely distributed piece of misinformation. And what other dubious "facts" are floating around our culture?// With all the left-brain/right-brain talk floating around this apa, maybe you should take a little space to put the matter in its proper perspective.

I was saddened to find that very, very few of the people I know (even the techies and scientists) saw Halley's Comet. More precisely, because it took some effort to find it, few of them bothered. I guess I took the trouble, even though I'm not much of a stargazer, because of history and sense of wonder and all that. I made sure that the members of my family saw it, and my neighbors, and anybody else I could get out of bed. In all, I saw it maybe six times, including Roxanne's expedition and a party where I showed it to Fred Poni, though Gene Wolfe was unable to pick it out.

Bonnie-- Barry and I have rigorously trained ourselves, over years of time, to be alert to any possible fanzine title which might pop up.// Um-- what's wrong with cooking Big Macs in beef tallow?// I don't wish to pick on you, but I find your sentence ironic: "How can we allow sanctions on immigrants (sic) when our own people do not have the simplest (sic) language skills." (Period at end also sic.) I hasten to add that nobody here is expected to be a perfect typist, but one ought to be careful about spelling and punctuation when one is complaining about a shortage of language skills. If you're not part of the solution, as Barry says, you're part of the precipitate.// The Buck Rogers car navigation system sounds nifty, but is it hard to pay attention to the map display while you're driving?

Alice-- "If only I could write something that would get past my alter ego, the copy editor." Step Right Up, ladies and gentlemen, and see the Eighth Wonder of the World! The most Amazing of God's creatures: Half Woman, Half Copy Editor! Step right this way!...// Boy, Bridge of Birds has really taken this apa by storm! I liked it that much, too.

Guy-- Halliday and Resnick? I never really understood why "there is no such thing as centrifugal force" until I had to teach M & R to sophomore engineers. As for the oscilloscope, it was one of the most marvelous discoveries of my education. Every boy should get to play with one. (Girls too, but we all know that girls don't like electronics.) Try Lissajous figures made by putting a sine wave and a square wave into the inputs of a differential amplifier, and using one such output for the X and one for the Y inputs of the scope. An ellipse becomes four ellipses, edges made of dotted lines. Vary the square wave amplitudes to make cylinders that get taller or shorter. With a little fiddling you can make the

revolving "ringworlds," and zoom in on them by changing the voltage scale on your scope. You can easily hack a diff amp from an op amp if you don't have the right Tektronix input modules for your scopes.

Donna-- I agree with you that Pyro is now a first-rate fanzine, and that we all ought to loc at least, contribute stuff if we can. It has been getting very good notices in other fanzines, which must warm Jamie's heart. Renee, who helped me get into fandom, raised me to believe that you aren't a Trufan until you've Pubbed Your Ish, so I'm glad to see GT with a strong fanzine again.

What is GT for? I wonder if we might consider it a mutual egoboo society, a place where you can find people who appreciate your hard work on your blimp, or your imaginative ideas about terraforming, or your cartooning ability.// Did your parents read to you a lot? Were you able to read before you entered school?

Marty-- In those ancient Apa-Techs, one thing I particularly enjoyed was the style of your cartoons. Hope there are more in store.// On Greasy Spoons: we favored a couple of spots in South Bend known as Shirley's and the Eat Restaurant. Both were technically part of a "White House" chain, and had similar menus. Shirley's had more character, but it was smaller and further from campus. The other place was on Indiana 31, and a big neon sign outside had a giant leaping swordfish with the legend "24 HRS/ EAT". In my crowd the Trucker's Special was fashionable: two eggs, toast, hash browns, and your choice of ham, bacon, or sausage, all for a dollar sixty. A Best Buy.

Re your fund to draft more "ordinary" people for public office: the American Physical Society has a Congressional Fellows Program. Every year a few young physicists are supported to work with Congress, usually as staff advisers. The fellow can work anywhere he wants to and doesn't get paid by the Representative or Senator he's working for. The Congress benefits from the availability of trained scientists, and the fellows get a close look at the machinery of government.// Your "haiku" has eleven syllables, not the canonical seventeen.

Mailing Comments on Apa-Tech 41

GTB-- My brother has gotten a job with the Fort Lauderdale edition of the Miami Review, a business paper. He reports that it's wonderful work, and that he's already managed to scoop the Herald and News business writers a few times. For now he's living with my folks, but he will probably get a place of his own later this year.

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Guy C.--

As a refugee from The Institute (that's MIT, folks), I wonder if you've had a chance to see the film Real Genius, and what you thought of it.// "...When the apa arrives, I usually page through looking to see if anyone had anything to say about my submission!" This is known as "egoscanning", a common practice among apahacks. In Chicago there's Windyapa, whose members are chiefly people from the city. Collation and distribution are often done at the fabled Thursday Night meetings. Six or eight apa members may be present, and throughout the rooms one can hear the sound of egoscanning: "flip... flip... flip..."// I want to read Feynman's QED but haven't gotten it yet. If positrons are really electrons moving backwards in time, just find a way to attach a chair to one, and you'll have a time machine. To move forward again, hitch the chair to a passing electron. What should be simpler?

Roxanne-- I should thank you and Scott again for your generosity. It's not easy to have a horde of techies overrun your little home (right, Donna?), and you were swell hosts. And thanks for returning my copy of DX Brings Danger, a near-genuine Heterodyne Boys adventure.// Looking at the list of visitors makes me think. How about a sign-up board, or a guest book, next year?// We certainly got carried away inviting people to our own picnic. Mary Lynn Johnson, who kept the "official" head

count, says we had seventy people. This despite the rain; most of us were indoors most of the day. But I like to have that much excitement going on around me... Once a year.// Rumor has it that in Marty Franz's last apparition he too was only a fuzzy blob.



Barry-- You finally got money from Windycon, but at this writing I am still out the twenty bucks. Watch out, folks. My correspondent also claims that they have a "policy" of not giving out any free memberships to participants in advance-- they only work by reimbursement. If they ask you to participate this year, insist on an advance membership anyway and see what happens.// Re your comment to Guy C.: Any apa members who live lives too uninteresting to write about are welcome to help write about my life, which is so interesting I never have time to write about it.// A friend of mine once received a reply postcard from Isaac Asimov which ended: "P.S. Are you proud you can't spell?"

Donna-- Alex Ellingsen commended me for bravery after the police showed up at your New Years' fireworks display: "You kept on playing the ukelele in the face of Overwhelming Armed Resistance."// It is explained later in Bridge of Birds that our heroes get assistance with their aeronautical device from a certain god.// Everybody is berating Marty about his "fuzzy blob" and the Not-So-Good Old Days-- but you shouldn't expect anything different from a guy who calls his zine "Incorrect Thoughts," should you?

Susannah-- I'd love to write for Starwind, but I am reluctant to make any promises, because my track record has been rather poor lately. I owe stuff to some other publications. Still, I hope to get around to you-- I have lots of ideas for the kind of articles you're looking for.// On malfunctioning Teddys: That's how Todd and Mary Lynn got their first bear at bargain rates-- the store where she works had mistakenly refunded a customer's money for a Teddy Ruxpin which had, as it turned out, been dropped in the bathtub. Mary Lynn got permission to bring it home, Todd was able to get it working again, and the store let them purchase it at a very low price.

Steve-- About Mr. Van Impe: Anybody who hates astrology is okay with me.// Yes, you were born too early for Pinkwater. But you can read his books now, and still enjoy them. He's got dozens. Bill Leininger, Dick Smith, and Leah Zeldes Smith were the first people to recommend him to me. Rod-- Good luck with your Amiga-- a wonderful graphics machine-- and good luck finding a spelling checker for it. I don't know anyone who could use one more than you. Except, of course, Hugh Daniel.// Gee, the annex at the Air Force Museum, with the YF-12 and the F-107 and other neat jets, seems to be closed whenever we visit. I understand it's kept open only by Air Force Association volunteers, and they can't staff it full-time, or even most weekends. And we Chicagoans don't get to Dayton all that often.// Alice's title is a password in vogue in Thomas Pynchon's novel Gravity's Rainbow. It is pronounced slowly at first, then with exponentially increasing speed: "F a a a s t e r than the speedoflight!"

His genius gave the world
some of the most beautiful
music ever heard...



...yet his destiny was to die in
poverty and disappointment.



The Amiga and the Atari ST nearly committed infanticide on each other; each company was so afraid that the other's machine would hit the market first that they both rushed out immature hardware with no software to speak of. They both had grandiose plans for getting a bunch of third-party developers to whip up good software that would appear at the same time the machines were released; but those good intentions vanished in the terror that the other guy's computer would come out first and steal customers. As a result both companies are still in difficulty, a year later, though I would guess that the Atari is a little likelier to survive than the Amiga.// The stuff you reprinted on safety features in the McDonnell Douglas shuttle design was really interesting. Who edits Claustrophobia? Wonder where the guy dug them up?

Marty-- Re your comment to Donna: The Eudaemonic Pie should not be a gospel for successful techie projects-- after all, they never did strike it rich. On the other hand, their projects got a lot further than anything GT ever did, cons money invested.// I've seen The Dream is Alive five times now.// "We all spent a happy Memorial Day playing frisbee and shooting each other." And isn't that just what America is all about? Makes ya proud.

Greg-- Another satisfied Amiga ~~xxxx~~ customer, I see.// All right! ALL RIGHT!!! That's enough. I'm sick of being goaded. I'm gonna write an Apa-Tech zine, and I'm gonna do it Real Soon Now. Just you wait.// Regarding the ongoing discussion

with Sam about education, I recommend Richard Mitchell's books to everybody, but I'd especially like to hear your reaction to them, Greg. Less Than Words Can Say is the better book, but you might be more interested in The Graves of Academe, where Mitchell explains how teacher education in the U.S. got to be in the sorry state we see today.// There's nothing impossible about the monkeys writing Hamlet. We need only wait a very long time... And remember that we now have machines to help us! I'm sure that using very fast parallel-processing computers to generate long random strings of gibberish, we could improve upon the monkeys' performance by at least a few giga-eons.

Yeah, I'm growing to loathe those yellow diamonds, too, and I still don't really understand their purpose or origin. (How about combining two fads: MISSING CHILD ON BOARD)// Re anti-SDI weapons: A few years ago the cruise missile was touted as the slickest new strategic weapon, because it could elude air defenses unless the Soviets sank zillions of rubles into fancy radars and missiles. Now we hear that we need to spend zillions on new air defenses ourselves, because the Reds now have cruise missiles.// I think, as you suggested on the phone, I will have more to say on the subject of flying cars.

You can profit from the boom in Intelligent Weapons Programs. **Here's how ...**

I LIFT MY LAMP BESIDE THE GOLDEN ARCHES

Gregory Ruffa
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("...as our state pulls away from the shore
and sinks slowly in the west...")

When people ask me lately what the weather's like here, I say, "Oh, it's about Richter 4.5..." The issue of Discover magazine with the collapsing overpass on the cover couldn't have been more accurately timed. The first one, which was the big one near Palm Springs, woke me up before I felt it. For some reason, I awoke from reasonably sound sleep around 2:25 in the morning. After about twenty or thirty seconds, I heard something chattering in my dark bedroom. By the time I located the source of the sound, I realized my bed was shaking. That went on for perhaps half a minute before settling down. During that time, I was sitting there thinking, "Should I wait for it to stop? Should I be running outside? Is it going to get worse?" When it stopped, I got up and took a survey of the apartment; the quake wasn't strong enough to knock anything over. The only significant disturbance was that someone's car alarm was set off. I went back to sleep, wondering when the aftershocks were coming. I've found that they usually come at least a day later and are usually weaker (but that's just one typical pattern...).

I think there was an aftershock from that quake, but we didn't notice it down here. That was all right, because we had more coming. The next one was the following weekend, while my parents were here visiting me. I was already up when it hit around a quarter of seven in the morning. This one was of lower intensity, but the epicenter was only forty miles away, so it felt stronger here. A couple little things got knocked over, but it wasn't bad; it got my folks up, though. That location's had two more little quakes since then, and the Palm Springs site has had another; I've felt four out of six of them. I seem to recall there was another little one in the Los Angeles area during July, as well. So, it's been an exciting month here. Everyone's bracing again for the Big One...

* * *

That's not all that's been shaken up around here. The day after I sent out my postmailing, the Shuttle/Centaur program was cancelled. Everything I told you about in June is astoundingly out-of-date. The least of our worries was where the new people were going to sit. (That was taken care of a week later. One of the other engineering groups was relocated, opening up a whole aisle of desks for our fourteen or so new employees -- not that that matters anymore.) Space Systems Division lost half its business in one day. Everyone who had anything to do with Shuttle/Centaur was flung out over the Abyss. (Just to make us feel better, a notice was sent around telling us that one of the major engineering chiefs was taking a job with Cubic Corporation the next Monday.) Of course, the engineers wouldn't be instantly unemployed: there'd be quite a bit of documentation to set down before the project could be shelved; that would keep some people busy for a few months. Then NASA decided that there was little point in writing up very much of anything -- it could be just about done in a month...

The spirit here was much like that conveyed to me by old newsreels of the evacuation of Dunkirk. There was a tremendous scramble to find other work for

engineers within the company. This is complicated severely by a corporate policy toward newly-hired students. General Dynamics promises a job for one year to any engineer they hire right out of college. Usually, they get exactly the position agreed to in the division that hired them. We are now being treated to the spectacle of a company asking the students who had not already arrived not to accept the offer extended to them or to see about taking someone else's offer if they haven't packed yet, please! GD has also diverted a couple of the people who were coming to Flight Mechanics to other divisions.

Nevertheless, there are seventeen "protected" people in our group of about 56 and there's only enough work in Flight Mechanics for half of us. A lot of "experienced" workers (those who have been here over a year) had to hoof it. In the aftermath, somewhere between fifteen to twenty of us are "on loan" to other groups in Space Systems or Convair, doing something related to trajectory or guidance analysis. Sadly, a few people are not going to be able to remain here, including two of my cubicle-mates (one's already gotten his notice). The government is dragging its heels on deciding what kind of rockets it wants to buy and the Titan/Centaur program may require very little from our group (the rumor is that Martin Marietta wants to do just about all of the analysis themselves). It does look like business will be coming back, but no one can say how soon. Our chief has been concerned about being left with a department with so many inexperienced people. With the others getting laid-off, loaned out, or transferred, it may be difficult to call some of them back when things pick up again, which will mean going out and hiring still more inexperienced employees later. I hope this doesn't mean our group will be demolished, but we won't know the full effects until next year.

Of course, Flight Mechanics may not be "my group" in the long run. I'm on loan to the Advanced Space Projects section, which is largely involved with research and design. I'm spending full-time right now working on trajectory analysis for manned Mars missions. (As I've mentioned previously, I'm working on a paper to present in Williamsburg, Virginia in two weeks. In fact, I'm really taking time away from it right now to write this...) When I get back from Atlanta, I'll be doing at least two things. I got inducted by this group to do more performance studies for them on future launch vehicle designs; I may eventually be permanently transferred to Advanced Space Projects. I also hope to have plenty of time to continue working on Mars missions, since the results we're getting are pretty interesting. (I'll discuss my paper next time, after it's been written.) NASA sounds like it's getting serious about sending people to Mars and is requesting proposals for contractual work on manned mission studies. If we get the contract later this year, I may get to spend lots of time doing that stuff! Right at the moment, though, I feel fortunate to have a job...

* * *

After such a long stretch, I'll have been to four conventions or conferences in two months. Westercon 39, Halleycon, was incredibly successfully (Gail Hanrahan may preen at this point...). The final newsletter indicated that the total number of memberships sold was over 2700, although Gail believes the number is closer to 2400 to 2500. Either way, it's believed to be the largest Westercon ever. Because the convention center and hotel it was held at has a fairly broad plan and is no more than three stories high, it didn't feel crowded. I only went during the days over Fourth of July weekend and still had a good time (it was a great place to avoid the commercial madness of Liberty Weekend...). There were eleven tracks of programming, including films and videos; the biggest problems that presented were that some of the panel topics were kind of lame and that the audio-visual staff had to dart around like mad to keep groups supplied with projectors and screens. I was on three panels myself and occasionally may have said something intelligent. I got to sit

on one panel between Duncan Lunan, author of a number of books on far-future space stuff, and Jerry Pournelle (everything they say about being on a panel with Pournelle is pretty much true...). I saw my first 3-D movie there: *It Came from Outer Space*. I'd seen this picture on television a couple times before, but never in this version. Frankly, the story is already OK and the gimmick doesn't really enhance it any. (Seeing it for the first time also without commercials, I'd never noticed before how much time is spent just driving between the town and the desert. Oh well, not one of my top ten SF movies, but probably in the top 50...) I also experienced the weird post-3D effect, where your retinas are color-fatigued and see red and green after-image tints for the next ten minutes (I'm sure almost every 3-D moviegoer has noticed this, but I've never heard anyone mention it).

The half-week from July 16th to 20th was Spaceweek at the Fleet Space Theater and Science Museum. I didn't get to any of that, even though there were a number of interesting talks scheduled. However, I did get involved in what turned out to be a minimal way. The San Diego chapter of the L-5 Society was having a feud with the rest of the Spaceweek people. It seems they wanted to invite pro-space political candidates and get visitors actively involved in campaigning for space. The Museum folks weren't too taken with this, so the L-5ers pulled out entirely and set up their own program for the weekend. I got a call after the Fourth of July weekend from the chapter president, asking if I'd be interested in being on a panel on the night of the 18th dealing with careers in aerospace. Since I didn't have too much to do that weekend (except my paper), I agreed to come. I got a call the Wednesday before the event from one of the other members asking me if I had obtained any other panelists. (!!) First I'd heard about that -- I told him that I hadn't because no one had told me I was supposed to be doing that. The fellow on the other end muttered something about crossed wires and said he'd talk with the chapter president. I got a call a couple hours later from that worthy telling me not to worry (so who was worried?) and that they'd scrounge up some other people. The publicity for their program appeared Thursday; my panel was Friday night. The L-5 version of Spaceweek was at one of the area high schools and was real informal, to say the least. My fellow panelist turned out to be from Convair and had a presentation already made up, so I just sat back and threw in some comments from time to time. Our audience was three high school students and two of the L-5 officers. The whole affair didn't do much to change my impressions of how the L-5 Society works. (A number of the Halleycon panels included "commercials" for the Society as well. In all, it strikes me as a group that imagines itself to be a lot more important and effective than it actually is...). So the evening wouldn't be a total loss, I went along afterwards to try out the high school's observatory. They have a nice 12", f/5 reflector with which we looked at Venus, Saturn, and the Moon. We would have been able to see Mars, too, if the mount for the telescope had been of the proper height, but we had a good time anyhow. It had been years since I'd used a telescope...

It was a little dry run for the star party the next weekend. A few of us at work had wanted to have one, so I sent a notice around Flight Mechanics to ask how many people would be interested and to choose a date. Initially, in early July, eighteen people said they'd come and would bring as many as six telescopes; those who expressed a preference wanted to go on the 25th. We figured out a reasonable place to go -- out into the mountains northeast of the city, near Ramona -- and sent another memo around; now only twelve said they'd come. Well, the sky cleared off nicely for us on the 25th and I went out at seven to scout out a place to set up. By the time it got dark, there were just four of us; fortunately, one of them was one of the owners of a telescope...

It was an Odyssey 1, which is a 13",f/4.5 reflector, which fits pretty tightly into the back seat of an American-sized car; it had a simple Dobsonian mount, which is quite easy to adjust. Since we were in a county park, electrical outlets weren't readily available, so there was no question of using a clock drive. Still, the instrument has a sizeable field of view, so tracking wasn't too vital to us.

That was the first night since mid-1979 that I'd been someplace dark enough to see more than a hint of the Milky Way. We were less than forty miles from downtown San Diego, but, with the city behind a ridge, the city only contributed some skyglow. The Galaxy looked like smoke, certainly not the standout spectacle I'd last seen from central Illinois. (An odd coincidence is that I was at the U. of Illinois' Prairie Observatory at the previous sighting; that telescope and I are now both here in San Diego...) It was plain, though, that we were seeing over a thousand stars. We had the Odyssey set up in a few minutes and started right off with Venus in the west. We hopped eastward across the sky to look at Saturn and Mars. The optics weren't aligned quite right, so we couldn't pull the planets into nice, sharp disks. We could plainly see, though, that Venus was in a waning gibbous phase; we could see the Cassini division in Saturn's rings and hints of dark features on Mars (didn't see the polar cap, though). I suggested looking at Albireo next: it's a binary star that constitutes the foot of the Northern Cross. Its component stars are orange and blue and make a very pretty contrast; they appeared very brightly in this 'scope. The owner showed us the Ring Nebula in Lyra and M13, a well-known globular cluster, in Hercules. Then I grabbed the telescope and just started hunting in the general direction of the center of the Galaxy, around Scorpius and Sagittarius. Over the next forty minutes or so, we picked up about six globular and open star clusters (one of the easiest neighborhoods to find them...). I was quite pleased with the quality of the images we were getting of stellar objects with this portable telescope. By ten o'clock, we decided to stop, since it was getting cool and a bit late for us. The evening's tally was three planets, a couple of binary stars, a planetary nebula, about a half dozen star clusters, eight artificial satellites, and a handful of meteors. This is a great time of year for hunting with even small telescopes. We could have done a lot more if we'd had some way to calibrate our aim (or if we'd bothered to bring some charts). We may try this again, still farther out from town, before the late autumn crud makes its return.

Gasp, and the next weekend (now last weekend) was the San Diego ComicCon, which I popped into for a few hours here and there. I was mostly there to see some of the animated stuff (which wouldn't surprise some of you for me to say so), including the four-hour animation party on Saturday night. I've finally seen an episode of the live-action *Time for Beany*. It has the production values you'd expect for mid-Fifties live television; the animated cartoons follow very directly from the feeling of the live puppet show. The other item of note is that the Japanese are continuing their cultural-imperialistic expansion into convention hucksters' rooms; there was three times as much of their stuff there as was there last year. (I'm studying the language in self-defense!)

I'm condensing things tremendously, since I need to finish this and get back to writing my paper. My Amiga's been getting a real workout the last two weeks in computing trajectories for me. I'm to stand up in front of people on the 18th to talk about it. I'll be at the Marriott Marquis for Worldcon starting Wednesday night; I still have some space if anyone needs a place to stay. One final note is that Jamie tells me that you should have *Pyrotechnics 38* in your hands by then; it's supposed to be in production now.

MAILING COMMENTS

APA-TECH 41

Cover It's always nice to see a well-integrated cover on this rag... The really neat part, though, is what happens when you plug it in!

Guy C. Congratulations on your appointment as a faculty resident! Now think back to the kinds of things we used to do to our floor tutors back in Bexley Hall -- then get some new locks for your door...

Your discussion of foreign educational systems was interesting to read, as it mentions the problems with them that the media here never see fit to discuss while criticizing our system. I heard a piece on National Public Radio a while back that indicates that the Japanese are beginning to experiment (on a small scale) with more open education that encourages creativity, largely for the reasons you mention.

I know how you feel about how scary the sky can be. I can remember my feelings some nights in Illinois when I'd see the Milky Way as a true river of light. For some "reason," I experienced a terrific urge to scream (didn't quite do it, though). Blaise Pascal said something like, "The eternal silence of infinite space terrifies me." (Said it in French, of course...)

Even if positrons are "electrons moving backwards in time" (whatever that means exactly), my feeling is that that probably can't help us build a "time machine." To send a mass of particles back in time in this way would seem to require an amount of energy comparable to the rest mass of the particles in order to convert them into antimatter. It would probably require still more energy to preserve the order of the particles (the Time Traveller would like to show up in the Past as a Time Traveller...) This method doesn't really make clear how one would go into the Future.

There's a more difficult aspect to this matter of time travel. For a body to appear in a time other than its own would seem to violate mass-energy conservation in that other time. Quantum mechanics may allow this, but the probability of its spontaneous occurrence declines exponentially with mass. One particle may go to "another time" with some probability, but it would be much less likely for a group to do so; it may be far less likely still that order would be preserved. The use of energy to translate an object in time (by whatever means) may make violation of conservation laws possible, but the amount of energy required may be enormous compared to the mass-energy of the object in question. Again, it may take even more energy to preserve structure.

There are schools of thought according to which "time" does not exist at all. Some people suggest that the structure of spacetime for each universe is a complete entity. In some manner, Consciousness perceives sequential change by seeing only one slice of spacetime "at a time." Time travel is impossible because the arrangement of objects of a universe in spacetime is immutable and conscious beings only see the universe in one order.

I find that particular view unsatisfying in a philosophical way, since it proposes a form of determinism: the four-dimensional structures of universes are established fixedly at creation. It also posits a rather bizarre status for conscious beings. I prefer to think of the universe (each universe?) as a "finite state machine," albeit one with a vast number of states. Each particle can be assigned a "state diagram" which would show its history and the range of possible states it could attain "in the future." However, the universe as a whole is only in a particular state from "moment to moment." The "Past" is remembered in cumulative effects on structures in the universe. The "Future" is a series of unattained states of the universe. In this way, the universe always carries the

"memory" of its past and also its future potentialities. The Past and the Future are not "places" one can go to. To "travel" in time, one would have to reconstruct a complete physical state of the universe (or a region of it).

I suspect that "time travel" is one of those things we may have to accept as forbidden by the design of the universe. The human mind is very good at dreaming up all manner of genuinely impossible things. I believe the Designer has "disallowed" certain things for important reasons.

Roxanne I'm not myself much excited by ham radio (do I need another hobby?) or sleeping out-of-doors, so I guess the Hamfest would not have been for me. Sounds like it was fun anyway...
The West Chicago picnic certainly did seem AMAZING, by all accounts. Alas, a telephone visit was the best I could do. (Maybe next time I'll show up via holovision...)

Barry Consider the Muck Wade as Higgins' prescient act of revenge for the canoeing incident...
I know how you feel about getting "stiffed" by convention committees. I was a speaker at the last Capricorn I attended in 1984(?) and received vague promises of a free membership. I didn't really expect it and I really didn't get it. (I'm glad to note in this issue that you finally did get your refund -- maybe there is some justice in the world!)

Donna In answer to your question, I can't name a reference, but somewhere it is written into our laws that English is the official language of the United States. As an example, the tests and oaths for immigrants to attain citizenship are administered in English. The prospective citizen must understand enough of the language to answer the questions and swear allegiance to the country.

Guy W. OK, I'm incredibly jealous that you get to go on trips to Japan (even though I'd be terrified to go right now -- I want to be a good deal more fluent in the language first!).

Your discussion of blowfish (fugu) jibes with what we read about it in a little article in my Japanese class. Certain organs, such as the liver, contain most of the nerve toxin, which is ten times more powerful than potassium cyanide; these organs are generally removed and disposed of. It is true that if you know the chef and/or offer the right bribe, you can get to try some of the toxic viscera. The restaurateur is taking an awful chance doing this, however; if he's caught at it or a customer actually dies of tetrodotoxin poisoning, his place can be shut down. In some bizarre way, I understood your "tastes like liquid nitrogen" metaphor -- an interesting way to think about it.

Susannah Welcome to the APA. From your description and other historical notes I've read, Ohio sounds like it was the California of the early Nineteenth Century, complete with wine-growing country and a major earthquake. As it was on the frontier of post-colonial America, maybe that isn't surprising.

Mothering certainly is difficult (not a job I'd want) and is vastly underrated in our culture. I observed enough of what my mother went through with her three children to appreciate the problems.

Gasp! A listing of great early composers for the pipe organ isn't complete without Dietrich Buxtehude (c. 1637 - 1707). [Sorry, that's sort of a private joke: a friend of mine from high school who was an organist always showed up with a collection of Buxtehude's music.] I also like many of the works of more recent composers like Saint-Saëns, Franck, Marcel Dupré, György Ligeti, Olivier Messiaen, and William Albright. How about you?

Steve The antipathy I have toward **Short Circuit** is not directed toward the main character. (Heck, I like stories with robots in the leading roles.) I had two major disappointments. One is that Number Five is so obviously the only "human" character in the whole movie; not one of the sentient biological creatures is interesting or likeable. I feel the real dramatic tension in robot stories comes from the conflicts that arise between two essentially distinct intelligent species and their differing points-of-view. This film pretty much avoids all that and certainly doesn't have much of anybody who can stand up for Our Side. The other objection I had is that the writing is so labored. This is supposed to be a comedy, but the writers are perpetually straining and fall back too often on cheap laughs and funny foreign accents. I liked **D.A.R.Y.L.** better, but, as I've said in **Pyro**, I didn't like it enough.

Gol', first time I've ever seen an ad for books that suggest that some "miracles" could be Lucifer's doing, though I'm sure the Church's *advocati diaboli* often proposed this possibility in their arguments.

Rod Congratulations on your perspicacity in purchasing an Amiga! (I feel I have to say this in reaction to some of the jeerers I've heard from.) Now let's hope the company doesn't fold up...

The 2061 return of Halley's Comet will be bright, but brief. At perihelion, it will be roughly between the Sun and us, so we will be at maximum closing speed. It will be quite bright both right before and right after perihelion passage, but will also be changing in relative distance very rapidly, so it will only be within naked-eye visibility for about three months (assuming there's dark sky *anywhere* on Earth by then...).

The **Claustrophobia** article contains a point which is at odds with some of the things I've been told. Solid rocket fuel is rather cheap, making the boosters themselves inexpensive, which is the major argument for using them despite their drawbacks. What I'm given to understand is that SRBs were chosen for the Shuttle because they were cheap, **available** technology, which minimized the "start-up" costs of the Shuttle program, even though cryogenic or hybrid (solid fuel, LOX as oxidizer -- hence an SRB that can be throttled easily) boosters would have been better and cheaper in the long run.

The article's notes on the political aspects of this decision on the boosters are of interest, but probably not provable. All the "could-have-beens" that keep being raised about the Shuttle's design are all very well. Still, all designs work wonderfully on paper. It is not a demonstrable claim that alternative designs would have been safer, as none of them have been tested under actual flight conditions.

What I dislike about this situation is the way all the "geniuses" came out of the woodwork after the accident, especially from companies that didn't win the contracts. Couldn't objections have been voiced back in the Seventies or even during the period of Shuttle operations? I guess that wouldn't have been politic...

Marty Should it surprise you that the space program has strong military aspects?

A great deal of modern rocket research has been funded by military departments. (The concept of "commercial space" didn't emerge until at least late in the Sixties; the phrase didn't appear until around 1979! So much for relying on industry to take the lead...) Humankind does tend to exploit new technologies for use as weapons (but that's been going on for millenia).

I disagree with the equation of support of the Shuttle with support for the militarization of space. The DoD is *not* the major beneficiary of the Shuttle program (not to say it is not *one* potential beneficiary). If the original schedule has remained intact, their use would have been around 30% (and they certainly aren't getting much benefit right now). The unhappy fact is that militarization would proceed with or without the Shuttle (the Air Force is one of the major funders of studies on future expendable rockets, the aerospace plane, and the transatmospheric vehicle). The cure for militarization is not through depriving the military of new

technology. But try getting humankind to take the cure...

"We ... spent a happy Memorial Day weekend playing Frisbee and shooting each other." Sounds like good, clean, all-American fun...

* * *

New rumor: The missing documents on the Lockheed "stealth fighter" were purloined by combined elements of Israeli intelligence, Testor's, and the staff of Aviation Week.

* * *

I saw Gordon Garb a couple of times this past month. I missed his presentation on Digital Productions at Halleycon, but did finally see it at the ComicCon. If you saw *Labyrinth*, the white owl flying through the opening titles and a number of the other effects in the movie are their work. He talked about how DP got its first Cray (it's not every day that someone says to you, "Here, have a supercomputer."). Their present XMP was obtained rather more prosaically: they went out and bought it. He "walked us through" the various stages of production for graphics and animation that are necessary before shooting film and consuming valuable Cray-time. Then, he showed us the company's demo film from 1984. There are some terrific things on there, but, as he remarked afterwards, "we're trying to get a new reel put together showing our recent stuff" (my paraphrase). He'll probably turn up with one at conventions by early next year. It's always good to see someone who's really enjoying his work.

One of the things I'm franking is a flyer from next year's local SF convention. Why should this be of any interest to you folks back East? Take a look at the list of guests of honor... The Conquistador committee was casting about for a fan guest and couldn't come up with anyone they wanted to invite who hadn't already been a guest of honor. Jamie and Gail piped up and said, "How about Bill Higgins?" The others said, "?!"; they were soon sold on the idea, however. When the Hanrahans were telling me about this, we started thinking that it might be even nicer if we brought the whole Bill'n'Barry show out here. The convention committee doesn't seem to want to buy two plane tickets, though, so I have proposed putting together the money independently to buy Barry's ticket. They may get to like that idea. More as this develops...

OK, I really have to get back to work now and to get this APA mailed. I'm looking forward to seeing those of you who can make it to Atlanta. In any event, I'll see you in these pages next month, yes? Take care.

TRANSPORTER
TOPICS

(Another exercise in creative spelling, brought to you by...)
Rodford E. Smith
730 Cline St.
Frankfort, KY 40601
(502) 227-7741

Number 37

Late again. Sigh.

Well, I have some more programs for my Amiga, now, including a second word processor. This one can actually count words. I also have an updated version of Hack, the difference being new, improved graphics, and several other games, as well as two music programs and an art program. I haven't done much work on my novel; instead, I finished and submitted an article to a gaming magazine. I think they may print it. This is the second time they have asked me to rewrite it.

I don't know about Greg Ruffa's proposal of a monthly APA-Tech. My output is increased since I got the computer, but whether I can do twice as much in this area is uncertain.

*

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When I was in high school we were taught that humans had no instincts. Lately, a few researchers have grudgingly admitted that we may have a few instincts, but they are of no real importance. To this I say, "Wake up, people!" Anyone who has learned about such things as dominance struggles and territoriality in wolves and such can't help but see corresponding drives at work in humans. Ever get really steamed at someone who beat you to a parking space? You were upset because they stole "your" territory. Much of the fighting in this world, on both the personal level and among groups, is caused by dominance displays. How many times have you seen someone at work start an argument over something trivial, nearly coming to blows? More dominance. Unless we can realize this and compensate for it we will never be truly civilized.

MAILING COMMENTS

Account: Is that \$3.32 or \$7.32? Oh, well, here's some cash just in case.

Guy: One of the people I regularly game with is working on her doctorate in educational psychology. She found your discourse on differences in American and European education very interesting. You gotta watch those cats. They can tell a soft touch when they see one. Concerning IQ tests, I like to brag that I score 98th percentile in taking them. Concerning the origin of our nearest planetary neighbor, did you know that there are several cultures whose folklore speaks of a time before there was a moon? I think it very unlikely that the moon's orbit could have stabilized in such a short time but then, where did they get the idea? Re. Yr. Cmnt. Alice B.: In my novel the main character keeps talking about and preparing food, especially dishes which the other people are unfamiliar with. (In one scene, he gets very upset with someone who has thrown out his last packet of

country ham, under the impression that it has gone bad.)

Roxanne: Sounds like an interesting get-together. Congratulations on the arrival of your new niece. Re. Yr. Cmmt. Finite: I just had my eyes checked. My left eye is slightly better than my right and I am also right handed, although less exclusively so than most people (semi-ambidextrous). Since my vision averages out to 20/800, "slightly better" dosen't mean much. Good thing my eyes are fully correctable.

Barry: I get Natural History, Smithsonian and several other magazines of similar ilk, so I am familiar with Gould and others like him. The "Joy" articles cover a wide range of subjects, from the latest in life extension to high-speed flight.

Donna: As mentioned above, I am now using another word processor. If I like this one well enough I may keep it long term and just get a spelling checker program seperately. Re yr ct Bonnie; no, English has never been declaired our official language, although people keep trying. Hope to see you all at ConFed.

Guy Wicker: Your place of employment sound like a lot of those mentioned in famous SF stories. Venus Equilateral comes particularly to mind. Three-dimensional circuitry, eh? What next, silicon hypercubes?

Dave, etc. (actually Susannah): Ah, tobacco. My grandfather raises it. I remember helping straighten the newley-set plants during childhood visits. I can't stand the smoke, but love the smell of cured tobacco. I will hunt up (down?) the guidelines for STARWIND and see if I can get something written for you. Maybe an expanded version of one of my "Joy" articles?

Steve: Regaurding your mention of "religious" literature, some people are just close-minded. Others see putting down a minority, especially one which they think is "strange", as a way of boosting themselves. Anyway, welcome.

Marty: You can buy civilian explosives (dynamite, potasium nitrate/diesal fuel mix) around here simply by getting a permit. Farmers use the stuff to remove stumps and big rocks, sometimes for fishing. As far as I know, there are no training requirements. Space is already militarized. It is a matter now of keeping up with our advesaries.

Greg: Congratulations and welcome to a fine computer. "Interest-free company loan", huh? Scribble! isn't bad - in some respects it is better than Symphony's Doc - and it is certainly better than Textcraft but I wish it checked spelling. I know what you mean about it being easier to edit from hard copy. My manuscripts are gone over at least twice by hand before submission. Try the Hack game, especially the new version with the improved graphics. Be warned; some people find it addictive. The Halley Project is not so much a game as an exploration tutor. I have two music synthesizer programs, apparently both pre-release test versions since there are still some serious bugs. My Amiga is hooked to my stereo. If you ever get that orbit program running I know at least three people who would like a copy. I had just about decided to dig out my dynamics book and try to write such a program myself, using the equation of gravity, the actual mass of the larger bodies and vector equations. I had little illusion about the likelihood of success, especially since I had not learned Amiga Basic yet. Then, my friends in Lexington told me about someone who was writing an orbit program which was supposed to be put on the market soon. So far, it hasn't appeared. Say, where is Pyro?

What I would like to see in a replacement for the Challenger is a

sort of first-and-a-half generation vehicle, with the aerodynamic design kept constant, the rockets (both solid and liquid fuel) with the already planned improvements and updated electronics. With modern computers they could shave a significant amount of weight off the orbiter, improve the capability and reliability and save money. Let's face it, the avionics used in the shuttle are ten to fifteen years old.

As you know by now, Shuttle Centaur has been canceled. Also, the "official" launch date for the next shuttle flight has been moved back. Are there any old Saturn 1B or Saturn 5 rockets lying around anywhere?

My joke about the Amatuer Space Telescope beating the Hubble Space Telescope into orbit turns out to be not so funny. The AST will probably piggyback into orbit with a military load in a few months to a year, whenever the Titan gets back into regular service.

They keep telling us where I work that they are going to remodel our building "real soon now" and have been for months.

I am sharing a room with the three people I am flying to the Worldcon with. I will use my American Express to pay the bill and they will reimburse me. We will be quite full, I'm afraid. No dead dogging for us; we are all going to be tight for money and have to get the plane back on time. Too bad. That is usually one of my favorite times at a worldcon.

There was a radio talk show here on the day of the shuttle disaster. One of the callers said that she bet the shuttle had been hit by a piece of the comet. As for the IUS, what can you expect from something which was originally named the Interim Upper Stage and intended for only temporary use untill something better could be developed?

One car sign I would like to see is "Board on Child," with a line drawing of a baby's buttocks and a paddle. Or "No Child on Board. Go Ahead and Hit Me."

SDI is still unproven but we should investigate it thouroughly to see if it is feasible, instead of just saying it isn't and ignoring it. I find it interesting that many of the technical achievements that opponents were clainimg just a few years ago to be impossible or impossibly expensive have already been reached. If nothing else, the basic research should give us some new ideas about how to handle other problems.

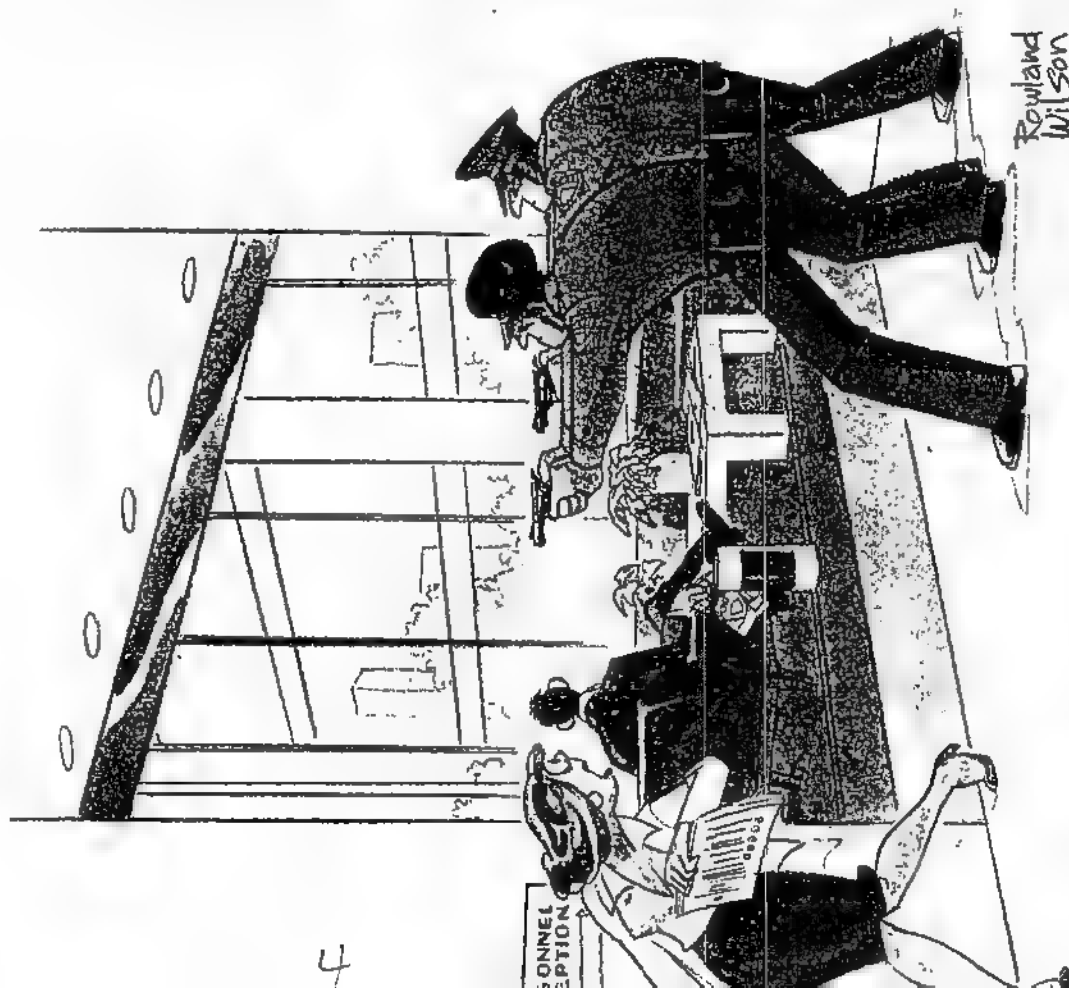
See ya!

Rod

TEXAS "MANTRACK" SITES AND CLAIMS AT A GLANCE

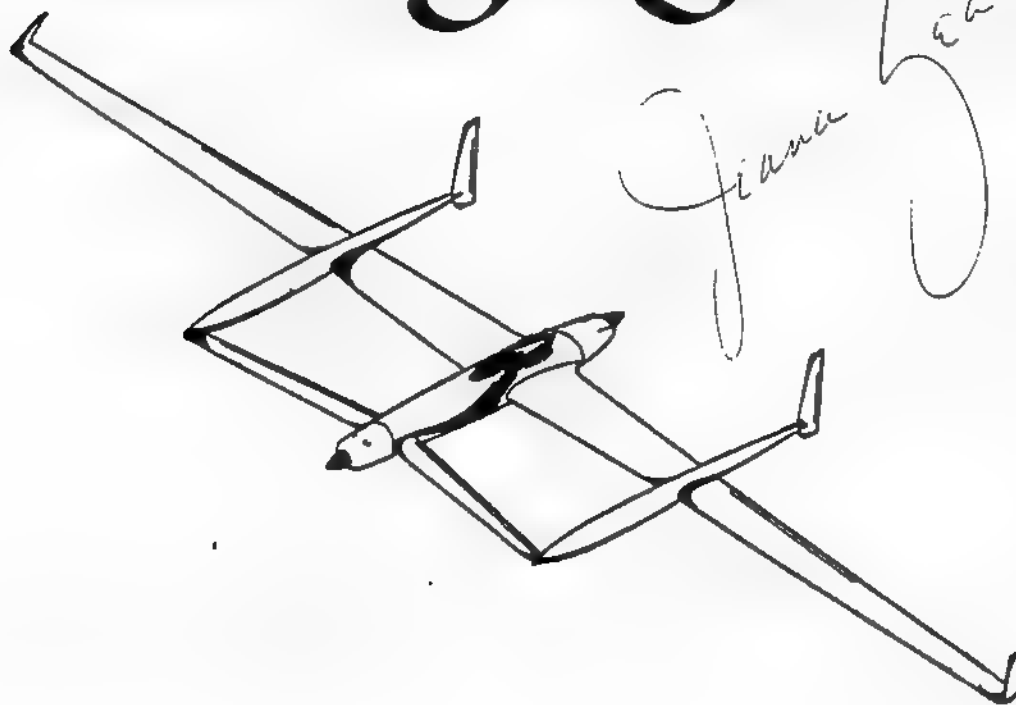
Creationist Claims	What These Features Actually Are
Features in or collected from Glen Rose area (Dallas-Fort Worth region)	
Dinosaur Valley State Park ledge: mantracks in right-left series, bear track; brontosaur track, track on cover of Cecil Dougherty's Valley of the Giants	River erosion produced elongated features in apparent right-left sequence; scour erosion with undercutting produced the "pads" and "claws" of the bear and brontosaur tracks. Solution erosion along fissures produced oblong mantracks. Erosional feature displayed on Dougherty's book has been identified as both a right and left footprint by creationists
Gibbs track on display in Glen Rose	Humanlike footprint carved in cement; many anatomical errors.
Caldwell track. Aluminum casts are being sold by Carl Baugh for \$100 each	Humanlike footprint known by local people to have been carved in the 1930s
Mantracks originally in private collection of Clifford Burdick	Carved fakes (and casts from them) dating to the 1930s. Two were discovered by Roland T Bird in a Gallup, New Mexico, curio shop. Recently purchased on behalf of Columbia Union College in Maryland. None show the characteristics of a human footprint made in soft mud
Von Däniken mantrack (also called "Dougherty track" by John Morris in Tracking Those Incredible Dinosaurs and the People Who Knew Them)	Portion of a three-toed dinosaur footprint near Cherry and Dougherty trails, painted with water or oil to conform to the outline of a human footprint and then photographed.
Mantracks on E. McFall's property near the town of Glen Rose, central Texas. Recently publicized by Carl Baugh. Human handprint. Saber-toothed tiger footprints	Tracks include three-toed dinosaur "heel" impressions, drag or slip marks, other elongated heel marks produced by contact of the rear of foot with the surface, and collapsed dinosaur tracks, with features obscured by wet mud collapsing back into track upon original formation. So-called saber-toothed tiger tracks, one alleged manprint, and probably the handprint (original removed before we arrived; photograph only was examined) are rock surface features and burrow casts or crawl marks made by a Cretaceous crustacean. They form irregular patterns that creationists have identified as toe, finger, and palm prints
Human trails in the region of Glen Rose: Taylor Trail, Ryals Trail, Turnage Trail, Giam Run	Trails produced by bipedal three-toed dinosaurs. Most represent dinosaur heel marks — apparently produced by the rear of the foot contacting the ground. Toe marks visible in some only by discoloration produced by oxidation of iron particles in the rock upon exposure and weathering. Others appear to be collapsed footprints. All trails show stride length and step angle patterns typical of bipedal dinosaurs, as well as some evidence of three toes.
Mantracks on Ken Thayer's Dinosaur Flats, near New Braunfels, Texas	South-central Texas, San Antonio area
Chariot tracks near Canon Lake, Texas	Some are overtracks of three-toed dinosaur footprints (formed when layers of sediment filled primary footprint molds, obscuring their original shape), some are solution features. Chariot tracks on Ken Thayer's property appear to have been produced by a moving inanimate object, such as a water-logged log
Mammoth fossils, "monkey or human child skull" exhibited at creationist conferences	Other claims
"Ordoevian" iron hammer (from London in west-central Texas)	Limestone concretions, weathered rocks of miscellaneous shapes; teeth on so-called skull are silica spurs
	Nineteenth-century miner's hammer enveloped in a concretion—a secondary formation that can develop in a decade.

Based on research contributions of L. Goodrich, J. Cook, S. Schuchman, R. Hastings, G. Aulston, and others, originally reported in Creation/Evolution.



"We have the results of your personality test now, Mr. Smith."

Voyager



Many of us grow up with dreams we never realize.

*We just don't take time to live them — or we let others discourage us.
We listen to the chorus of "Why bother?" or "What will you gain from it?"
and never experience the joys of achieving goals we set for ourselves.*

Everyone should have a dream — and strive to reach it.

Dreams can be big or small. It doesn't matter.

*What matters is: that a dream come true can change a person in some
wonderful yet indefinable way.*

*And sometimes the best part is that one dream will lead to another, and
another, until finally there is an endless cycle, a limitless horizon as vast as
the sky itself.*

Adapted by George A. Rutan from the book *Alone Against the Atlantic* by Gerry Spies. Dedicated to Dick Rutan, Jeana Yeager and the Voyager program.

VOYAGER FACT SHEET

Round-The-World Aircraft

An aircraft built for **long range** fuel efficiency. The goal is 25,000 statute miles without stopping, without refueling.

Dimensions

Wing Span 110.8 ft.
Canard Span 33.3 ft.
Fuselage Length 25.4 ft.
Boom Tank Length 29.2 ft.
Vertical Tail Height 10.3 ft.

Cabin/Cockpit Dimensions

Cabin Length 7.5 ft.
Cockpit Length 5.6 ft.
Cabin Width 2.0 ft.
Cockpit Width 1.8 ft.
Maximum 3.3 ft.

Weights

Wing Area 363 sq. ft.
Canard Area 61 sq. ft.
Total Area 424 sq. ft.
Wing Aspect Ratio 33.8
Canard Aspect Ratio 18.1

Structural Wt. 939 lbs.
Empty Wt. 1,858 lbs.
World Flight take-off Wt. .. 11,326 lbs.
World Flight landing Wt. ... 2,276 lbs.
Fuel Wt. (1,489 gal.) 8,934 lbs.

Performance / Propulsion Data

Proprietary. Performance definition and propulsion system details will be released after flight test verification.

Interesting Facts

Voyager carries its 1,489 gallons of fuel in 15 separate fuel tanks, integral to the wings, boom tanks, canard and fuselage.

The Voyager took over 2 years and 22,000 man hours to construct.

The basic load-carrying structure (wing spars) are made from solid, oven cured, magnamite graphite fiber. The skins are made from very thin magnamite graphite sheets over a honeycomb paper core. Smaller amounts of Aramid fiber and fiberglass were used. No metal, other than fasteners (nuts and bolts) were used anywhere in the basic structure of the aircraft.

The Voyager was designed to carry over five times its weight in fuel.

The Voyager is designed for a crew of two. A cockpit/seat is provided for the ON duty pilot crew member. The OFF duty crew member has an area of relative privacy in which to stretch out and rest/relax/sleep fully prone.

"GO VOYAGER"

The merchandise below is made available for support of the "VOYAGER" project.

We hope to keep the program "Grass-roots" -
a project made possible by "The People."

Please share in this effort to achieve this history making voyage.

For information on how to join in this VOYAGER adventure, see details on other side.
Become a part of HISTORY.

- | | | |
|--|--------|-------------|
| <input type="checkbox"/> VOYAGER Button | \$1.00 | |
| <input type="checkbox"/> Poster-VOYAGER & Pilot | \$3.00 | |
| <input type="checkbox"/> VOYAGER Patch | \$5.00 | |
| <input type="checkbox"/> VOYAGER Lockheed Data
Plan Commemorative Patch | \$5.00 | |
| <input type="checkbox"/> VOYAGER Tie Tack | \$7.50 | Gold/Silver |
| <input type="checkbox"/> VOYAGER Charm | \$7.50 | Gold/Silver |

← PLEASE ADD \$1.00 FOR SHIPPING
ON THESE ITEMS

PLEASE ADD \$2.00 FOR SHIPPING →
ON THESE ITEMS.

- | | | |
|--|---------|----------|
| <input type="checkbox"/> VOYAGER Cap | \$10.00 | |
| <input type="checkbox"/> VOYAGER T-Shirt | \$10.00 | S-M-L-XL |
| <input type="checkbox"/> VOYAGER Poster 16x20 | \$10.00 | |
| <input type="checkbox"/> Aviation Suite Record Album | \$13.00 | |
| <input type="checkbox"/> VOYAGER Belt Buckle | \$40.00 | |
| <input type="checkbox"/> Video Cassette "VOYAGER"
"The Final Challenge" | \$50.00 | VHS/BETA |
| <input type="checkbox"/> VOYAGER Sweat Shirt | \$20.00 | S-M-L-XL |

SOME OF THESE ITEMS MAY SEEM A LITTLE HIGH, "BUT" PLEASE CONSIDER THAT
YOU ARE HELPING VOYAGER REACH THE 25,000 MILE GOAL.

VOYAGER LIKENESS COPYRIGHT 1981

VOYAGER

AROUND-THE-WORLD NON-STOP, NON-REFUELED

VOYAGER AIRCRAFT, INC.
HANGAR 77
Mojave, California 93501
(805) 824-4790

★ PLEASE NOTE:
(ITEMS TO BE AVAILABLE SOON)
For those of you interested in
Postal Hand Cancellations Stamps
for the VOYAGER flight, keep your eyes open.
They will be available.

Make checks payable to "VOYAGER"

	Item	Price	Quantity	Amount
1	VOYAGER Button	\$1.00		
13	Poster-VOYAGER & Pilot	\$3.00		
7	VOYAGER Patch	\$5.00		
17	VOYAGER Lockheed Data Plan Commemorative Patch	\$5.00		
17	VOYAGER Tie Tack	\$7.50 gold/silver		
17	VOYAGER Charm	\$7.50 gold/silver		
	VOYAGER Cap	\$10.00		
21	VOYAGER T-Shirt	\$10.00 S-M-L-XL		
51	VOYAGER Poster 16x20	\$10.00		
47	Aviation Suite Record Album	\$13.00		
71	Video Cassette "VOYAGER" The Final Challenge	\$50.00 VHS/BETA		
11	VOYAGER Sweat Shirt	\$20.00 S-M-L-XL		
	TOTAL			
	Guarantee Refund Add 6% Tax			
	TOTAL			

NAME: _____ DATE: _____

ADDRESS: _____ CITY: _____ STATE: _____ ZIP: _____ PHONE: _____

VOYAGER IS:

a special airplane that was designed by Burt Rutan to fly Around the World, Non-Stop and Unrefueled. In the history of aviation, no aircraft has ever achieved this goal. A U.S. Air Force specially equipped B-52 flew 12,532 miles in 1962. This is still the world distance record.

VOYAGER has the potential to double the existing long-range record, and to completely circle the globe in the process. This Around-the-World flight is viewed as the last significant milestone of aviation history.

The VOYAGER has now been built and flown successfully. But there is still a long way to go.

ADDITIONAL TASKS INCLUDE:

- Developmental and systems flight testing.
- World-flight engine and propeller development.
- Global avionics installation.
- Life support equipment development.
- Mission control and communication; FAI record verification.
- Finally, the big task, fly the world mission itself.

This effort is going to cost money. We need your help. A contribution of \$100 or more will make you a member of the Voyager Impressive People Club. As a V.I.P., you will:

1. Receive the Voyager Milestone Newsletter.
2. Have your name carried on the world flight record attempt.
3. Receive a V.I.P. card, membership number, and patch.
4. Enter your name (or we will enter it for you) in the Voyager Log Books; these logs will go with the Voyager to the Smithsonian National Air and Space Museum.

Any contribution to this project would be appreciated.



VOYAGER

COUNT ME IN! HERE IS MY CONTRIBUTION.

- ☐ \$100.00 (or more). Entitles me to V.I.P. Membership
- ☐ \$ _____

Address: _____

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State: _____

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Date: _____

Voyagers Impressive People

JOIN THE VOYAGER ADVENTURE!

We Invite YOU to join
The Voyager Around-the-World Flight Support Team

Thanks for your support,
Voyager Pilots,

Jeana Yeager
Dick Rutan

Your

Pilots: Jeana Yeager and Dick Rutan
Hangar 77 Airport
Mojave, California 93501
(805) 824-4790

THE CHALLENGE: AROUND THE WORLD FLIGHT

HISTORY'S WORLD TRIPS: Round-the-world travel has intrigued man since the 15th century. Captain *Del Cano* and crew, in the only surviving ship of the Magellan expedition, was the first to circumnavigate the globe. Their voyage departed Spain in 1519 and took three years to complete. Stimulated by Jules Verne's *Around the world in 80 Days*, Nellie Bly a young reporter for Joseph Pulitzer's "New York World" made the journey in 72 days 6 hours, by steamship and rail.

The first *FLIGHT* around the world was made, in 1924, by two United States Army "Douglas World Cruisers", open cockpit biplanes. This 27,553 mile trip took 175 days. The German dirigible "*Graf Zeppelin*" cut the record to 21 days in 1929. Captained by Dr. Hugo Eckener, this grand airship left Lakehurst, New Jersey on the 8th of August making refueling stops in Germany, Japan and Los Angeles, before landing back at Lakehurst. In 1931, Wiley Post and Harold Gatty further reduced the record to 8 days and 15 hours in a Lockheed Vega named the "Winnie Mae". Two years later, again using the Winnie Mae, Wiley Post was the first to fly around the world *SOLO*, this time in only 7 days, 18 hours. Amelia Earhart disappeared in 1937 on an attempted around-the-world flight. In 1938, Howard Hughes and a four man crew in a Lockheed 14 flew the same Wiley Post route, in 3 days, 9 hours. The first *NON-STOP* flight was made by a USAF B-50, the "Lucky Lady II", in March 1949. The flight was made possible by multiple air-to-air refuelings by B-29 tankers.

TRUE WORLD FLIGHT: The Federation Aeronautique International, the World authority for the certification of international records, currently requires a distance equal to or greater than that of the Tropic of Cancer (22,858 miles) to qualify as a bonafide around-the-world flight. Earlier flights were often "short loops" high in the northern hemisphere that would not now qualify as true globe-circling flights. For example, the flights of Wiley Post and Howard Hughes were "short-cut" routes across northern Russia and Alaska, a distance of only 15,474 miles.

All of the above flights required enroute stops or aerial refuelings to complete their circumnavigation of the globe.

TO DATE:

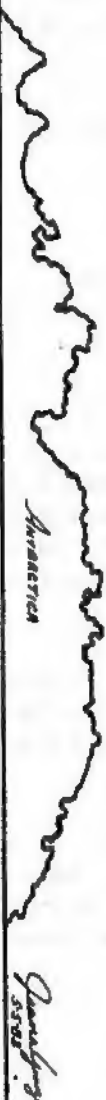
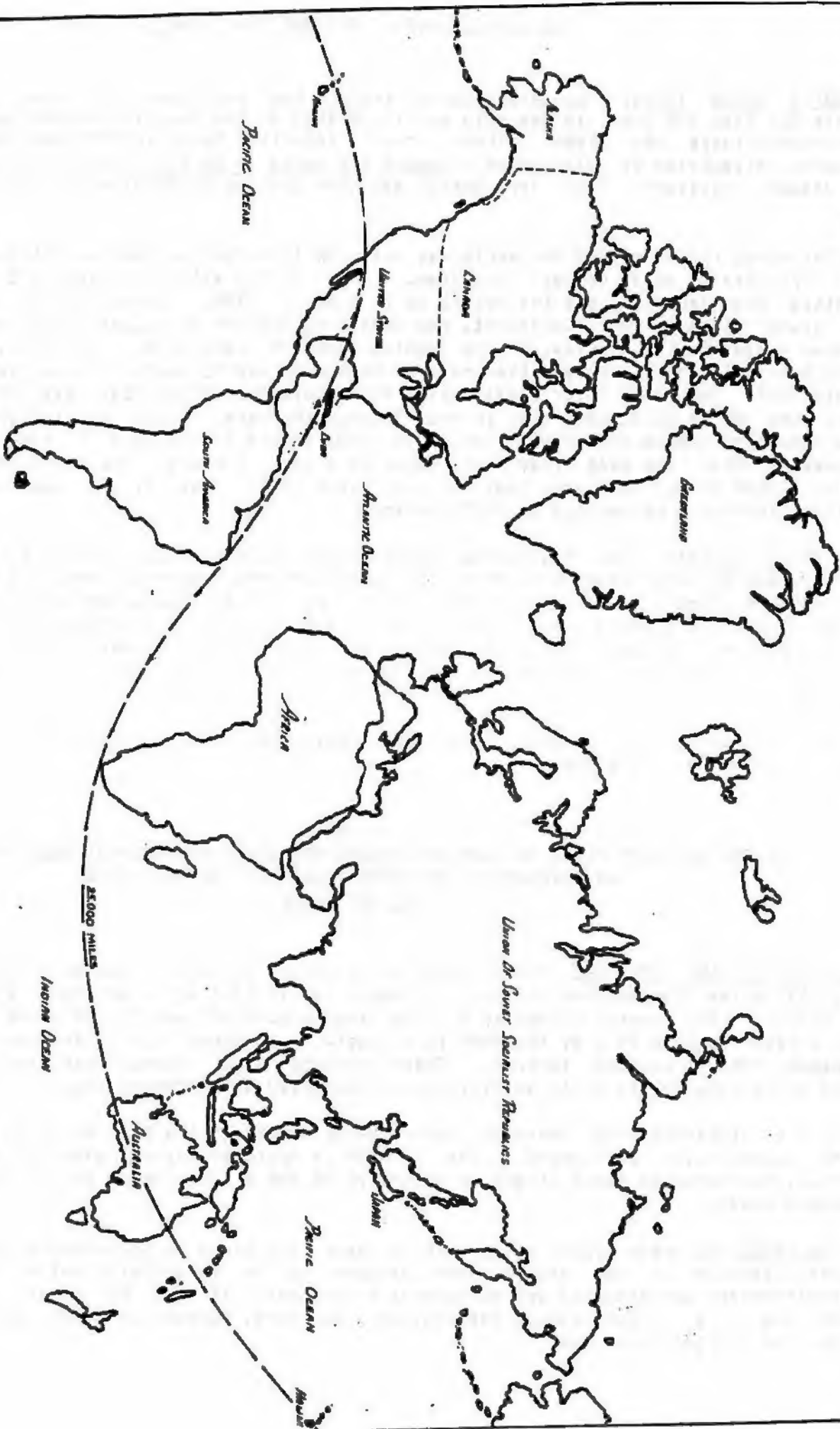
NO ONE HAS EVER FLOWN AN AIRCRAFT AROUND THE WORLD NON-STOP WITHOUT REFUELING
NO GOVERNMENT, AEROSPACE INDUSTRY, OR INDIVIDUAL
NO ONE, EVER

UNREFUELED DISTANCE RECORDS: The farthest any aircraft has ever flown on a single load of fuel was 12,532 miles from Okinawa to Spain, a record set in 1962 by an Air Force B-52H, eight-engine jet bomber. The longest flight by a piston engine aircraft was 11,235 miles from Australia to Ohio, a record set in 1946 by the NAVY in a specially prepared P2V-1 Neptune patrol aircraft nicknamed "The Truculent Turtle". These records still stand, but are far short of the 22,858 miles required to claim an officially-recognized world record today.

A true globe-circling, non-stop, non-refueled flight is the last major aviation record yet to be successfully challenged. The VOYAGER is specifically designed for, and capable of, a non-stop, non-refueled world flight in excess of 25,000 miles without the unlikely assistance of favorable winds.

THE CHALLENGE: Non-stop global flight has not been considered by governments or the aerospace industry because it had always been assumed to be technically out of reach. Now, using state-of-the-art aerodynamics and structural techniques, it can be done. Like man-powered flight and like flight itself, the challenge is there, success is within technical reach, and the goal is a significant one.

ROUTE OF VOYAGER





splashdown!

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R.A. MacAvoy

FAN GUEST OF HONOR

Bill Higgins

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